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**Operations**

**AFSPECWAR MOUNTAIN  
OPERATIONS PROGRAM**



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This manual implements Department of the Air Force Policy Directive (DAFPD) 10-35, *Air Force Special Warfare*. This publication establishes the Air Force Special Warfare (AFSPECWAR) Mountain Operations Program, to include program authority and administration; training, qualifications, and requirements; and procedures applicable to mountain operations. This publication applies to all AFSPECWAR personnel as defined by DAFPD 10-35, including AFSPECWAR assigned mission support and civilian personnel involved in mountain operations missions, training, support, or administration. Except where noted otherwise, this publication applies to all levels of the Regular Air Force, the Air Force Reserve, and the Air National Guard. For the purpose of this manual, references to major commands (MAJCOMs) shall be interpreted to include the Air National Guard and the Director, Air National Guard shall be interpreted to be the equivalent of a MAJCOM commander. This publication does not apply to the United States Space Force. Ensure all records generated as a result of processes prescribed in this publication adhere to Air Force Instruction (AFI) 33-322, *Records Management and Information Governance Program*, and are disposed in accordance with (IAW) the Air Force Records Disposition Schedule, which is located in the Air Force Records Information Management System. Refer recommended changes and questions about this publication to the office of primary responsibility (OPR) using the Department of the Air Force (DAF) Form 847, *Recommendation for Change of Publication*; route DAF Forms 847 from the field through the appropriate functional chain of command. This publication may be supplemented at any level, but all supplements must be routed to the OPR of this publication for coordination prior to qualification and approval. Send supplements to Headquarters Air Force Special Warfare Directorate (AS/A3S) at [AF.A3S.Workflow@us.af.mil](mailto:AF.A3S.Workflow@us.af.mil) or to AF/A3S, 1480 Air Force Pentagon, Washington, DC 20330-1480. The authorities to waive

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## Chapter 1

### AIR FORCE SPECIAL WARFARE MOUNTAIN OPERATIONS PROGRAM

**1.1. Purpose.** This manual establishes the AFSPECWAR Mountain Operations Program to standardize administration, training, and qualification procedures. All mountain operations will be conducted IAW this manual. **(T-2)** Additionally, this manual defines equipment and safety standards required across all MAJCOMs to increase mission effectiveness.

**1.2. Scope.** This manual applies to all AFSPECWAR personnel (Regular Air Force, Air Force Reserve, Air National Guard, DAF civilian personnel, and contractors when stipulated in their contracts) involved in training, operational, or administrative aspects of mountain operations. This publication does not address confined space and structural collapse, or tactical insertion and extraction from an aerial platform. This manual does not address off-duty mountaineering (e.g., recreational climbing) by DAF military or civilian personnel.

#### **1.3. Key Terms and Definitions.**

**1.3.1. Mountain Operations.** Operations that expose personnel to adverse and technical terrain (e.g., alpine, glacier, canyon, river, etc.) with significant environmental hazards (e.g., high altitude, vertical obstacles, extreme temperatures, and weather changes, etc.) that obstruct movement, where risk and mobility increase proportionally and safety is dependent on technical knowledge and proficiency in specialized tactics, techniques, procedures (TTP), and equipment.

**1.3.2. Climber.** A generic term used to encompass personnel who are qualified to perform mountain operations, or those participating in training under the supervision of qualified personnel.

**1.3.3. Certification.** Procedure used to document competency in a particular task. Not interchangeable with qualification, which requires an evaluation.

**1.3.4. Evaluator.** An AFSPECWAR instructor who has been designated to conduct AFSPECWAR evaluations or a task certifier qualified to conduct third party evaluations.

**1.3.5. Spot Evaluation.** The evaluation of a specific task or event that provides the commander with feedback on individual skills or specific team mission capabilities.

**1.3.6. Qualification.** Designation arising from graduating an approved course or a successful evaluation, documented on AF Form 1035, *AFSPECWAR Evaluation Form* or AF Form 803, *Report of Task Evaluations* that allows a member to perform specified duties.

**1.4. General Guidance.** Only qualified and current mountain leaders or mountain operators, as outlined within this AFMAN, using Department of Defense (DoD) approved and/or certified procedures and equipment, will oversee mountain operations. **(T-2)**

**1.4.1. External Publications.** This manual references outside publications, to include the United States Special Operations Command Manual (USSOCOM M) 350-34 *Special Operations Forces Baseline Interoperable Standards - Mountaineering* and *Mountaineering: The Freedom of the Hills*. When this manual directs climbers to reference outside publications, consult the most current published version.

1.4.2. Mountain operations with Joint Force or foreign units. Climbers may use joint or foreign procedures if they do not conflict with this manual or written guidance prescribed by this manual. **(T-2)** Climbers may use joint or foreign equipment if it meets requirements specified in **Chapter 4** and has been inspected by a mountain operator or mountain leader who received basic familiarization and emergency procedures training on the equipment.

**1.5. Deviations from Guidance and Waiver Authority.** Do not deviate from the guidance in this manual except when the situation demands immediate action to prevent loss of life, serious injury, or an otherwise urgent safety requirement exists. When it is necessary to protect those under their control from a situation not covered by this manual and immediate action is required, the climber with the highest level of qualification has authority and responsibility for the course of action taken. That climber evaluates available options, and takes or directs the appropriate action to ensure the safety of the operation.

1.5.1. Climbers functioning under the purview of a chartered test organization may deviate from the contents of this manual as outlined in individually approved test plans required for test and evaluation purposes. When a test plan has deviations from this manual, forward the approved test plan to the AFSPECWAR Mountain Operations Program Manager (AMPM) for awareness and tracking. **(T-1)**

1.5.2. Units will report all deviations without an approved waiver to the appropriate waiver authority when tactically or operationally feasible. **(T-1)** Waiver authority will notify AF/A3S of deviation and assess any need to modify current standards. **(T-1)**

1.5.3. Units will report deviations occurring during operational mission execution, to include contingencies, to the MAJCOM Mountain Operations Program Manager (MMPM) (include AF/A3S as informational addressee) when tactically or operationally feasible. **(T-2)**

1.5.4. Waiver Authority. MAJCOM commanders have authority and responsibility for mountain operations under their control. MAJCOMs will coordinate with AF/A3S any waivers of safety and operational procedures; personnel qualification requirements; and equipment related to mountain operations. **(T-1)** Procedures, checklists, and record traffic published at the MAJCOM level and on record with AF/A3S constitute authorization to deviate from standard guidance in **paragraph 1.4**.

1.5.4.1. For waivers to deviate from established procedures specified in this manual and associated inter-service references during contingencies, waiver authority is the Air Component Director of Operations, the Joint Special Operations Task Force Director of Operations, equivalent Major Military Command Director of Operations, or their designated representatives, as applicable.

1.5.4.2. For exercises and training, waiver authority will be retained at the MAJCOM Director of Operations or their designated representative unless specifically identified in this manual. **(T-2)**

1.5.5. Operational or procedural waiver requests must substantiate the urgent or unusual circumstances that justify their approval. Requestors will include the following:

1.5.5.1. Procedure or item from which there is a deviation. **(T-1)**

1.5.5.2. Specific unit and name(s) of individual(s) requiring the waiver. **(T-1)**

1.5.5.3. Inclusive dates of the waiver period. **(T-1)**

- 1.5.5.4. Specific location for which the waiver will be granted. **(T-1)**
- 1.5.5.5. Circumstances that necessitate the requirement for the waiver. **(T-1)**
- 1.5.5.6. Applicable training, upgrade, and documentation requirements used to prepare personnel to operate under the waiver. **(T-1)**
- 1.5.5.7. Unique currency and refresher training specifications that pertain to the waiver, as applicable. **(T-1)**
- 1.5.5.8. Mission impact of waiver denial. **(T-1)**
- 1.5.5.9. Planned actions, including implementation status, to correct the conditions that necessitated the waiver. **(T-1)**

## Chapter 2

### ROLES AND RESPONSIBILITIES

**2.1. Deputy Chief of Staff, Operations, through the Director of Special Warfare (AF/A3S).** AF/A3S serves as the service proponent and OPR that executes programmatic oversight of the AFSPECWAR Mountain Operations Program.

2.1.1. Coordinates and publishes mountain operations program guidance.

2.1.2. Appoints the AMPM to oversee the Mountain Operations Program and function on behalf of AF/A3S when delegated.

2.1.3. Briefs and coordinates with Headquarters Air Force directorates and other officials or organizations on mountain operations, equipment, and training matters.

2.1.4. Acts as the primary interface with other service agencies to coordinate, publish, and distribute all applicable joint publications and periodicals pertaining to mountain operations TTP, and authorized equipment. **Exception:** Air Force Special Operations Command (AFSOC) has direct liaison authority to coordinate with USSOCOM and USSOCOM components.

2.1.5. Establishes qualification criteria and administrative procedures for documentation in training records.

**2.2. AFSPECWAR Mountain Operations Program Manager (AMPM).** The AMPM serves as the principal mountain operations subject matter expert responsible for program standardization, evaluation, and mountain operations-related activities and logistics.

2.2.1. Maintains subject matter expertise in mountain operations and meets at least one of the following criteria:

2.2.1.1. Holds a 19Z, 1Z, or 1T0 Air Force Specialty (AFS) and is qualified as a mountain leader.

2.2.1.2. Has previously held a 19Z, 1Z, or 1T0 AFS and was previously qualified as a mountain leader.

2.2.1.3. Has extensive field experience with diverse exposure to a variety of mountain and rope rescue, rope access, and climbing skills.

2.2.2. Maintains, coordinates, and authorizes changes to the AFSPECWAR Mountain Operations approved-for-use-list (AUL).

2.2.3. Assists Air Education and Training Command (AETC) in formulating, implementing, and evaluating formal training programs for mountain operations. Recommends and coordinates changes to training and procedures, where appropriate.

2.2.4. Develops and maintains mountain operations qualification training plans (QTP).

2.2.5. Assesses and certifies service and civilian curricula, qualification training plans (QTP), and/or blocks of training for basic and advanced skills that meet mission requirements. This responsibility may be delegated to the MMPM.



2.2.6. Establishes administrative procedures for qualifications, continuation training, and currency requirements in coordination with MMPMs.

2.2.7. Maintains Mountain Operations Program checklists and safety inspection checklists.

2.2.8. Convenes and chairs the Executive Mountain Operations Committee meeting to discuss and review AFSPECWAR and MAJCOM Mountain Operations Program efforts.

2.2.8.1. Committee serves as the focal point for cross-MAJCOM communication; develops, publishes, and distributes safety messages, equipment bulletins, and quality deficiency reports; and coordinate TTP across the AFSPECWAR community. The AMPM may invite additional attendees as necessary.

2.2.8.2. AFSPECWAR Executive Mountain Operations Committee voting members are the AMPM and MMPMs.

2.2.8.3. Other Executive Mountain Operations Committee members include: AFS Career Field Managers; 1Z1 (Pararescue (PJ)), 1Z2 (Combat Control (CCT)), 1Z3 (Tactical Air Control Party (TACP)), 1Z4 (Special Reconnaissance (SR)), 1T0 Survival, Evasion, Resistance, and Escape (SERE), 19ZXA (Special Tactics Officer (STO)), 19ZXB (TACP Officer), and 19ZXC (Combat Rescue Officer (CRO)).

2.2.9. Maintains a total force MMPM contact roster to disseminate information and promote communication.

2.2.10. Establishes direct access to the Air Force Safety Automated System (AFSAS) (<https://afsas.safety.af.mil>) or establishes a process to ensure organizational safety personnel inform them of all mountain operations mishaps as soon as operationally feasible.

2.2.11. Develops, publishes, and distributes applicable safety messages, equipment bulletins and quality deficiency reports as required.

2.2.11.1. Reviews all reported military mountain operations mishaps, incidents, near-mishaps, hazards, and deviations.

2.2.11.2. Coordinates review of mishap reports across applicable headquarters offices.

2.2.12. Participates in or sends a representative to joint and sister service mountain operations program conferences, as required.

**2.3. Air Force Chief of Safety (AF/SE).** AF/SE, through the Air Force Safety Center, Occupational Safety Division, will:

2.3.1. Ensures the AFSAS has a category for incidents that occur under this program.

2.3.2. Upon request, provides statistical data analysis on all mountain operations-related mishaps or events.

2.3.3. Upon request, provides technical assistance to mountain operations-related investigation boards and other safety matters.

2.3.4. Coordinates with joint and sister service safety offices as appropriate.

2.3.5. Updates safety investigation membership requirements and ensures that the convening authority selects one or more mountain leaders as Safety Investigation Board (SIB) members.

2.3.6. Incorporates the AMPM and MMPMs into all mountain operations safety and investigation processes.

**2.4. Air Force Surgeon General (AF/SG).** AF/SG, through the Air Force Medical Readiness Agency will review all mountain operations mishap reports and provide medical support to mishap investigations.

**2.5. Career Field Manager (CFM).** CFMs of mountain operations-inherent Air Force Specialties; 1Z1, 1T0, and 19ZXC CFMs will update the AF Officer and Enlisted Classification Directories and AFS-specific CFETPs with requirements for conducting mountain operations and supporting education and training plans. CFMs coordinate these updates with the AMPM for standardization and program oversight.

**2.6. Air Force Materiel Command (AFMC).** AFMC will coordinate any test, evaluation, and certification of mountain operations equipment when requested by AF/A3S.

**2.7. Air Education and Training Command (AETC).** AETC will oversee and provide initial skills training as directed in individual CFETPs.

**2.8. MAJCOM Commander.** MAJCOM commanders have authority and responsibility for mountain operations under their control to include the development of service unique TTP and equipment that are not provided for elsewhere in this manual.

2.8.1. Appoints a MMPM in writing and forward appointment letter to AF/A3S. These positions advise the MAJCOM commander on mountain operations-related issues.

2.8.2. Be the final authority on all requests for waiver of safety and operational procedures; and personnel qualifications (except physical standards).

**2.9. MAJCOM Mountain Operations Program Manager (MMPM).** The MMPM serves as the principal mountain operations programmatic subject matter expert responsible for mountain operations program standardization and mountain operations-related activities and logistics for the MAJCOM.

2.9.1. Maintains subject matter expertise in mountain operations and meets at least one of the following criteria:

2.9.1.1. Holds a 19Z, 1Z, or 1T0 AFS and is qualified as a mountain leader.

2.9.1.2. Has previously held a 19Z, 1Z, or 1T0 AFS and was qualified as a mountain leader.

2.9.1.3. Has extensive field experience with diverse exposure to a variety of mountain and rope rescue, rope access, and climbing skills.

2.9.2. Establishes, approves, and monitors (as required) command-specific mountain operations programs, policy, guidance, and training programs according to operational need.

2.9.3. Submits mountain operations equipment requirements to the AMPM prior to government obligation for validation and eventual inclusion on the AFSPECWAR Mountain Operations AUL as described in [Chapter 4](#).

- 2.9.4. Coordinates (as required) with AF/A3S and MAJCOM functional managers (MFM) to establish directives, procedures, and requirements to evaluate training programs and capabilities of assigned or attached climbers to perform their duties consistent with the MAJCOM mission.
- 2.9.5. Participates in the AFSPECWAR Executive Mountain Operations Committee.
- 2.9.6. Assists AF/A3S to develop and maintain mountain operations QTPs.
- 2.9.7. Attends AFSPECWAR, joint, sister service, and industry conferences, meetings, boards, task forces, and committees pertaining to military mountain operations when feasible and applicable.
- 2.9.8. Identifies, prepares, or validates operational requirements, mission needs statements, and operational requirements documents as required. Additionally, participates in the MAJCOM mission area plans process.
- 2.9.9. Coordinates with MFMs and training points of contact (POC) to request slots for formal courses.
- 2.9.10. Conducts operational, administrative, and equipment inspections of units with a mountain operations program, at least every 24 months, to verify compliance with this manual and other appropriate safety regulations; forwards a copy of results to the AMPM.
- 2.9.11. Provides units with program checklists and safety evaluation checklists prior to unit mountain operations program inspections.
- 2.9.12. Reviews, concurs, or non-concurs with requests for waivers of safety, operational procedures, and personnel qualifications (except physical standards).
- 2.9.13. Reviews service and civilian curricula, qualification training plans, and/or blocks of training for basic and advanced skills that meet mountain operations requirements and coordinates approval with AF/A3S.
- 2.9.14. Participates in mountain operations investigations as required. The MMPM for the affected MAJCOM coordinates mountain operation mishaps with AF/A3S, the AMPM, and other MMPMs, as appropriate, to ensure at least one MMPM will not be authorized access to privileged safety information about the mishap until after all legal investigations are complete.
- 2.9.15. Reviews all mountain operations mishap, incident, near-mishap, and hazard reports and ensures all required follow-up actions are accomplished.
- 2.9.16. Manages safety recommendations using AFSAS; and forwards reports of completed actions to the AMPM to ensure dissemination of lessons learned.
- 2.9.17. Disseminates safety information, tactics, and procedures to unit POCs.
- 2.9.18. Approves or disapproves mountain operations equipment research, development, test and engineering (RDT&E) (see [paragraph 4.1.4](#)).
- 2.9.19. Reviews and archives all operational consolidated mission reports that pertain to mountain operations, and forwards copies to the AMPM.
- 2.9.20. Establishes the interval of snow and ice operational training via memorandum for record or supplement to this publication.

## 2.10. Unit Commander.

2.10.1. Appoints in writing, a POC to manage the unit's mountain operations program and forwards a copy of the appointment letter to the MMPM. The unit POC advises the commander on mountain operations-related issues and oversees all unit mountain operations-related areas. Unit commanders may, at their discretion, delegate the below duties to the mountain operations POC.

2.10.2. Implements higher headquarters policies and procedures.

2.10.3. Ensures all written guidance prescribed by this manual, as well as manuals, TTP, technical orders (T.O.) for unit-owned equipment, is maintained and readily available to all assigned climbers.

2.10.4. Ensures unit-assigned personnel who participate in mountain operations and are not from mountain operations inherent AFSs are trained and, when applicable, designated in writing on the Squadron's Letter of Qualifications (LoX).

2.10.5. Ensures mountain operations are implemented into the unit's risk management process. Guidance on risk management is provided in AFI 90-802, *Risk Management*.

2.10.6. Generates and forwards operational consolidated mission reports that pertain to mountain operations through the chain of command, and to the MMPM, within seven days of mission completion or as soon as operationally feasible.

2.10.7. Submits mountain operations equipment requirements to the MMPM prior to government obligation for validation and eventual inclusion on the AFSPECWAR Mountain Operations AUL as described in [Chapter 4](#).

2.10.8. Reports all deviations without an approved waiver.

2.10.9. Reports and reviews all events, to include mishaps, incidents, hazards, and near-mishaps according to paragraphs [7.4](#) through [7.4.5](#).

2.10.10. Ensures all mission support personnel meet the training and qualification requirements outlined in [paragraph 3.6](#) when augmenting mountain operations.

## 2.11. Unit Mountain Operations Point of Contact (POC).

2.11.1. Maintains subject matter expertise in mountain operations and meets at least one of the following criteria:

2.11.1.1. Holds a 19Z, 1Z, or 1T0 AFS and is qualified as a mountain leader.

2.11.1.2. Has previously held a 19Z, 1Z or 1T0 AFS and was qualified as a mountain leader.

2.11.1.3. Has extensive field experience with diverse exposure to a variety of mountain and rope rescue, rope access, and climbing skills.

## 2.12. Climber.

2.12.1. Performs mountain operations only when a current annual medical examination is on file with the climber's assigned medical treatment facility. Additionally, climbers may conduct and log training events when not prohibited by medical restrictions.

2.12.2. Monitors their training and currency requirements to ensure proper record entries in on-the-job training (OJT) records, and Aviation Resource Management System (ARMS) or other MAJCOM- or AFS-specific formats.

2.12.3. Maintains the training standards, currency and qualification requirements in this manual and report changes in status immediately to supervisors, including medical conditions or duty limiting conditions that impact the ability to safely participate in mountain operations training and missions.

## Chapter 3

### QUALIFICATION, TRAINING, & CURRENCY REQUIREMENTS

**3.1. General Training Requirements.** Mountain operations training events are those conducted by current and qualified climbers, climbers in upgrade training (UGT), or climbers who are regaining currency. **Note:** Off-duty mountaineering (e.g., recreational climbing) does not satisfy military mountain operations requirements for qualification or continuation training.

3.1.1. All mountain operations will be conducted IAW this manual. **(T-2) Exception:** AFSOC-assigned climbers will adhere to USSOCOM M 350-34 for mountain operations qualification and training under USSOCOM authority. **(T-2)**

3.1.2. Climbers who have completed an AF/A3S approved course of instruction, or completed training at a formal DoD approved mountain operations course, and are assigned to a unit with an approved mountain operations program are authorized to use the TTP and equipment on which they are current and qualified.

3.1.3. Climbers upgraded at the unit-level must receive an evaluation to be qualified as a mountain team member, mountain operator, and mountain leader (see paragraphs [3.2](#), [3.3](#), and [3.4](#)). AFSs governed by AFMAN 10-3500V1, *Air Force Special Warfare Training Program* and AFMAN 10-3500V2, *Air Force Special Warfare Standardization and Evaluation*, will document evaluations on AF Form 1035. **(T-1)** AFSs governed by Department of the Air Force Instruction (DAFI) 36-2670, *Total Force Development* will document evaluations on AF Form 803. **(T-1)**

3.1.4. Mountain operators and mountain leaders may perform unsupervised mountain operations commensurate with level of qualification. **(T-1)**

3.1.5. DAF Civil Service Climbers. DAF civilian climbers are identified as permanent DAF employees who were previously qualified as mountain operators or mountain leaders, or have extensive field experience with diverse exposure to a variety of mountain rescue, rope access, and climbing skills. DAF civilian climbers will maintain the mountain operator or mountain leader qualification and the same training currencies as those required for their military counterparts. **(T-1)**

3.1.6. Contracted Support. Commercial climbers contracted by the Regular Air Force, the Air Force Reserve, and the Air National Guard who are not permanent government employees are not subject to the provisions of [paragraph 3.1.3](#), unless stated in their contract. Contracting officers or acquisition functions will clearly state the requirement to comply with accepted safe mountain operations practices on all purchase orders and statements of work for contracted personnel. **(T-1) Note:** This requirement only applies to contracted personnel supporting mountain operations (e.g., trainers or instructors), not contracted courses.

**3.2. Mountain Team Member Qualification.** Mountain team members are capable of performing basic tasks required to safely operate in adverse terrain. Mountain team members will always be supervised by a mountain operator or mountain leader. **(T-1)** A climber may be qualified as a mountain team member after completion of unit-level UGT, or upon graduation from one of the courses in [Table 3.1](#).

**Table 3.1. DoD Mountain Team Member Courses.**

<b>Service</b>	<b>Course</b>	<b>Location</b>
DAF	Pararescue Apprentice Course	Kirtland Air Force Base, New Mexico
USMC	USMC Summer Mountain Leaders Course	Mountain Warfare Training Center, California
NSWC	Maritime Cold Weather Course	NAVSPCWAR Cold Weather Detachment, Alaska
USA	Basic Military Mountaineering Course	Northern Warfare Training Center, Alaska
USA	Army Mountain Warfare School	Camp Ethan Allen, Vermont

3.2.1. Unit-Level UGT. Units with a mountain operations program may upgrade personnel assigned to the unit who have not completed one of the courses in **Table 3.1** UGT must be conducted or supervised by a mountain operator or mountain leader, meet critical task list requirements in **Table 3.2**, meet task, condition, standard requirements in AF/A3S Mountain Team Member QTP, and culminate with a one-time SPOT evaluation. **(T-1)**

3.2.2. SPOT Evaluation. The climber will be evaluated on all items in **paragraph 3.6.1** to the standard defined in AF/A3S Mountain Operator QTP. **(T-1)**

3.2.3. Documenting Training. UGT will be documented IAW DAFI 36-2670, AFS specific CFETP, and/or AF/A3S approved QTP. **(T-1)**

3.2.4. Documenting Evaluations. AFSPECWAR personnel will document evaluations on AF Form 1035, other AFSs will document evaluations on AF Form 803. **(T-1)**

**Table 3.2. Mountain Team Member Critical Task List.**

MOUNTAIN TEAM MEMBER	
TASK #	TASK DESCRIPTION
1-1	Environmental effects on operations in mountain environments
1-2	Environmental effects on operations in cold weather environments
1-3	Land search requirements
1-4	Tie classifications (knots, bends, and hitches)
1-5	Tie knots, bends, and hitches
1-6	Perform emergency medical operations in adverse terrain
1-7	Construct improvised litters
1-8	Construct improvised harnesses
1-9	Patient packaging for horizontal raise
1-10	Patient packaging for vertical raise
1-11	Select, use, and maintain climbing equipment and clothing/sustainment items
1-12	Perform mountain movement techniques
1-13	Perform search party duties
1-14	Perform rope management
1-15	Select routes
1-16	Construct natural anchors
1-17	Construct artificial anchors
1-18	Use climbing communications
1-19	Use belay systems
1-20	Perform rope ascent with friction hitches
1-21	Perform rope ascent with mechanical ascending devices
1-22	Perform rappel techniques
1-23	Knot bypass on-rappel procedures
1-24	Retrievable rappel system
1-25	Tandem (buddy) rappel
1-26	High-angle pick-off
1-27	Construct and use mechanical advantage systems
1-28	Perform low and medium-angle evacuation
1-29	Perform high-angle evacuation
1-30	Suspension traverse evacuation method (aerial ropeway suspension system)
1-31	Tree rescue and recovery

**3.3. Mountain Operator Qualification.** Mountain operators are proficient with the technical skills and tactical knowledge required to oversee mountain operations in all environments. Mountain operators are the primary trainers for mountain operations and oversee UGT for the mountain team member and mountain operator qualifications. A mountain team member may be qualified as a mountain operator after completion of unit-level UGT, or upon graduation from a sister service certified course approved by the MMPM.



3.3.1. Unit-Level UGT. UGT must be conducted or supervised by a mountain operator or mountain leader, meet critical task list requirements in [Table 3.3](#), meet task, condition, standard requirements in AF/A3S Mountain Operator QTP, and culminate with a one-time SPOT evaluation. **(T-1)**

3.3.2. SPOT Evaluation. The evaluation is both skills and scenario based. The climber will be assigned an unsupervised role in a mountain evacuation scenario and be evaluated on all items in paragraphs [3.6.1](#) and [3.6.2](#) that pertain to the position the climber is assigned and to the standard defined in AF/A3S Mountain Operator QTP. **(T-1)**

3.3.3. Documenting Training. UGT will be documented IAW DAFI 36-2670, AFS specific CFETP, and/or AF/A3S approved QTP. **(T-1)**

3.3.4. Documenting Evaluations. AFSPECWAR personnel will document evaluations on AF Form 1035, other AFSs will document evaluations on AF Form 803. **(T-1)**

**Table 3.3. Mountain Operator Critical Task List.**

<b>MOUNTAIN OPERATOR</b>	
<b>TASK #</b>	<b>TASK DESCRIPTION – BLOCK I</b>
2-1	Environmental effects on operations in mountainous environments
2-2	Land search party requirements
2-3	Prepare search plans
2-4	Tie classifications (knots, bends, and hitches)
2-5	Tie knots, bends, and hitches
2-6	Construct improvised harnesses
2-7	Patient packaging for horizontal raise
2-8	Patient packaging for vertical raise
2-9	Select, use, and maintain climbing equipment and clothing/sustainment items
2-10	Perform search party duties
2-11	Perform rope management
2-12	Select routes
2-13	Construct natural anchors
2-14	Construct artificial anchors
2-15	Use climbing communications
2-16	Use belay systems
2-17	Perform lead protection placement utilizing aid climbing techniques
2-18	Perform lead protection placement utilizing free climbing techniques
2-19	Perform rope ascent with friction hitches
2-20	Perform rope ascent with mechanical ascending devices
2-21	Perform rappel techniques
2-22	Knot bypass on-rappel procedures
2-23	Retrievable rappel system
2-24	Tandem (buddy) rappel
2-25	High-angle pick-off
2-26	Construct and use mechanical advantage systems

2-27	Perform low and medium-angle evacuation
2-28	Perform high-angle evacuation
2-29	System knot bypass
2-30	Suspension traverse evacuation method (aerial ropeway suspension system)
2-31	Tree rescue and recovery
<b>TASK #</b>	<b>TASK DESCRIPTION – BLOCK II</b>
2-32	Environmental effects on operations in cold weather and high-altitude environments
2-33	Terrain characteristics affecting travel in arctic and alpine environments
2-34	Emergency medical operations in cold weather and high-altitude environments
2-35	Avalanche causes
2-36	Avalanche hazard prediction methods
2-37	Avalanche survival actions
2-38	Avalanche rescue equipment requirements and techniques
2-39	Perform snow/alpine travel movement fundamentals
2-40	Perform skiing techniques
2-41	Perform snow shoeing techniques
2-42	Perform avalanche-prone terrain crossing
2-43	Perform avalanche rescue
2-44	Perform emergency medical operations in adverse terrain
2-45	Construct snow and ice anchors
2-46	Perform ice axe self-arrest and team-arrest
2-47	Perform glacier travel fundamentals wearing crampons
2-48	Perform crevasse rescue procedures
2-49	Place ice climbing protection
2-50	Lead an ice climb

**3.4. Mountain Leader Qualification.** Mountain leaders have practical experience in a variety of mountain environments in both summer and winter conditions. They have well-developed hazard evaluation, risk mitigation, and safe route-finding skills over all types of terrain and conditions. Mountain leaders have the expertise to advise commanders on all aspects of mountain operations, particularly the preparation and leadership required to move personnel and equipment over technically difficult, hazardous, or exposed terrain. A mountain operator may be qualified as a mountain leader after successful completion of unit-level UGT.

3.4.1. Unit-Level UGT. UGT must be conducted or supervised by a mountain leader, meet critical task list requirements in **Table 3.4**, meet task, condition, standard requirements in AF/A3S Mountain Leader QTP, and culminate with a one-time SPOT evaluation. **(T-1)**

3.4.2. SPOT Evaluation. The evaluation is scenario based and the climber's leadership ability will be evaluated during crisis or deliberate mission planning, preparation, and execution of a casualty evacuation from snow, ice, or glaciated terrain to the standard defined in AF/A3S Mountain Leader QTP. **(T-1)**

3.4.3. Documenting Training. UGT will be documented IAW DAFI 36-2670, AFS specific CFETP, and/or AF/A3S approved QTP. **(T-1)**

3.4.4. Documenting Evaluations. AFSPECWAR personnel will document evaluations on AF Form 1035, other AFSs will document evaluations on AF Form 803. **(T-1)**

**Table 3.4. Mountain Leader Critical Task List.**

<b>MOUNTAIN LEADER</b>	
<b>TASK #</b>	<b>TASK DESCRIPTION – BLOCK I</b>
3-1	Prepare search plans
3-2	Lead mission planning for a mountain operation
3-3	Supervise selection, use, and maintenance of climbing equipment, PPE, and sustainment
3-4	Lead mountain movement through steep, exposed, or technical terrain
3-5	Supervise construction of natural anchors
3-6	Supervise construction of artificial anchors
3-7	Lead low and medium-angle evacuation
3-8	Lead high-angle evacuation
<b>TASK #</b>	<b>TASK DESCRIPTION – BLOCK II</b>
3-9	Supervise selection, use, and maintenance of snow/ice equipment, PPE, and sustainment
3-10	Lead movement through avalanche-prone terrain
3-11	Lead avalanche casualty rescue
3-12	Lead movement through glaciated terrain
3-13	Supervise construction of snow and ice anchors
3-14	Lead mission planning for a rescue operation in snow, ice, or glaciated technical terrain
3-15	Lead casualty evacuation in snow, ice, or glaciated terrain

**3.5. Continuation Training and Frequency Requirements.** Climbers will maintain the currency requirements associated with the climber’s qualification (see [Table 3.5](#)). **(T-2) Note:** Combat Mission Ready (CMR) status is defined in AFMAN 10-3500V1, [Table A2.1](#). Mountain operations currency is not required for CMR. Currency requirements in [Table 3.5](#) fulfill *Mountaineering Principles Review*, in AFMAN 10-3500V1.

3.5.1. Documentation. All currencies are documented on AF Form 1098, *Special Task Certification and Recurring Training* or electronic system of record.

3.5.2. Maintaining and Regaining Currency. Mountain operators and mountain leaders maintaining currency do not require supervision. If currency has lapsed for more than 12 months climbers will not perform mountain operations unless supervised by a current mountain operator or mountain leader and must complete continuation training requirements in [Table 3.5](#) associated with the respective qualification level prior to performing unsupervised mountain operations. **(T-2) Note:** Mountain team members, regardless of currency status, will always be supervised by a mountain operator or mountain leader. **(T-2)**

**Table 3.5. Continuation Training.**

Task	Min Freq.	Mountain Team Member	Mountain Operator	Mountain Leader
X = Currency requirement for associated qualification * = Frequency is determined at the MAJCOM (24 months recommended)				
Fundamental mountain skills	12 mos	X	X	X
Adverse terrain evacuation	12 mos		X	X
Snow and ice knowledge refresher	12 mos		X	X
Snow and ice operations	24 mos		*	*

**3.6. Continuation Training Task Definitions.**

3.6.1. Fundamental Mountain Skills. Purpose: Ensure climbers maintain and are able to perform fundamental skills. Description: In unit or field conditions climbers perform the following skills. Reference AF/A3S Mountain Operations QTPs.

- 3.6.1.1. Tie knots, bends, and hitches.
- 3.6.1.2. Construct natural and artificial anchors.
- 3.6.1.3. Perform rope ascent with friction hitches and mechanical ascending devices.
- 3.6.1.4. Perform rappel techniques.
- 3.6.1.5. Knot bypass on-rappel procedures.

3.6.2. Adverse Terrain Evacuation. Purpose: Ensure climbers maintain and are able to perform rope rescue skills. Description: In unit or field conditions climbers perform the following skills. Reference AF/A3S Mountain Operations QTPs.

- 3.6.2.1. Construct and use mechanical advantage systems.
- 3.6.2.2. Patient packaging for horizontal raise and vertical raise.
- 3.6.2.3. System knot bypass.

3.6.3. Snow and Ice Knowledge Refresher. Purpose: Ensure climbers maintain the required knowledge base to operate in avalanche prone and glaciated terrain. Description: In unit or field conditions climbers review or perform the following skills. Reference AF/A3S Mountain Operations QTPs.

- 3.6.3.1. Environmental effects on operations in cold weather environment.
- 3.6.3.2. Emergency medical operations in adverse terrain.
- 3.6.3.3. Avalanche causes.
- 3.6.3.4. Avalanche hazard prediction methods.
- 3.6.3.5. Avalanche survival actions.
- 3.6.3.6. Avalanche rescue equipment requirements and techniques.
- 3.6.3.7. Glacier travel movement fundamentals.
- 3.6.3.8. Crevasse rescue procedures.

3.6.4. Snow and Ice Operations. Purpose: Ensure climbers maintain and are able to perform necessary skills to operate safely in alpine environments with avalanche hazards and glaciated terrain. Description: In field settings that offers alpine, snow, and glaciated terrain climbers perform the following skills. Reference AF/A3S Mountain Operations QTPs.

- 3.6.4.1. Perform snow/alpine travel movement fundamentals with skis or snow shoes.
- 3.6.4.2. Perform avalanche rescue.
- 3.6.4.3. Construct snow and ice anchors.
- 3.6.4.4. Perform ice axe self-arrest and team-arrest.
- 3.6.4.5. Perform glacier travel movement fundamentals wearing crampons.
- 3.6.4.6. Perform crevasse rescue procedures.
- 3.6.4.7. Place ice climbing protection.

**3.7. Special Warfare Mission Support (SWMS) Personnel.** SWMS personnel are defined as individuals augmenting mountain operations and do not require mountain operations qualifications or training currency to perform assigned duties (e.g., patient models, role players in training scenarios, etc.). SWMS personnel will:

- 3.7.1. Augment mountain operations only when a current annual medical examination is on file with the member's assigned medical treatment facility and will report changes in medical conditions or duty limiting conditions that impact the ability to safely participate in mountain operations training. **(T-2)**
- 3.7.2. Be briefed on local environmental conditions and hazards. **(T-2)**
- 3.7.3. Only perform duties under the direct supervision of a qualified and current mountain operator or mountain leader. **(T-2)**
- 3.7.4. Trained on tasks commensurate with their required duties. Training will be documented on AF Form 623A, *On-The-Job Training Record Continuation Sheet*. **(T-2)**
- 3.7.5. Monitor their training to ensure proper record entries in OJT records or other MAJCOM- or AFS-specific formats. **(T-2)**

**3.8. Civilian Certifications.** The civilian mountaineering community houses the preponderance of mountain operations expertise. As such, climbers are highly encouraged to pursue continuing education from the civilian mountaineering community.

## Chapter 4

### EQUIPMENT & INSPECTIONS

**4.1. Mountain Operations Equipment and Accessories.** The preponderance of mountain operations equipment research, testing, and development is performed in the civilian mountaineering community. With few exceptions (e.g., one-inch tubular webbing (national stock number (NSN) 8305-01-691-5682)) the majority of mountain operations equipment and accessories are available as commercial off-the-shelf. This manual addresses two categories of equipment:

4.1.1. Category I: Life-rated equipment. Category I is any piece of equipment required to provide a safe, controlled environment for a climber by satisfying the life support requirements of the intended operation (e.g., ropes, hardware used in rigging, etc.). Category I equipment will be used IAW manufacturer's specifications and will meet DoD, International Climbing and Mountaineering Federation (UIAA), European Committee for Standardization (CE), or National Fire Prevention Agency (NFPA) standards for adverse terrain recovery operations. **(T-2)**

4.1.2. Category II: Non-life rated equipment. Category II is any piece of equipment (e.g., snowshoes, packs, sleds, etc.) that aids operational capability but is not essential for life support.

4.1.3. Approved-for-Use-List (AUL). Category I equipment that does not meet standards in [paragraph 4.1.1](#) will be authorized via the AFSPECWAR Mountain Operations AUL, which is approved by AF/A3S. **(T-1)** The AFSPECWAR Mountain Operations AUL will include: item name/description, NSN or part/model number, and manufacturer. **Note:** Category I equipment that meets standards in [paragraph 4.1.1](#) is approved for use, unless specifically directed otherwise, and does not require inclusion on the AUL.

4.1.4. Research, Development, Test, and Evaluation (RDT&E). MAJCOMs must approve all mountain operations equipment RDT&E. MAJCOMs will coordinate equipment RDT&E with the AMPM. **(T-2)**

**4.2. Equipment Deviations.** Using equipment that does not meet parameters in [paragraph 4.1.1](#) is authorized when the tactical or operational need outweighs the risk, and a deliberate risk management assessment is accomplished. When training for situations that require less than a 10:1 static system safety factor, the training system will be backed up by a safety system that meets a 10:1 static system safety factor. **(T-2)**

**4.3. Category I Equipment Maintenance and Inspections.** This section outlines criteria for maintenance and inspection of Category I equipment required for mountain operations. See Air Force Tactics, Techniques, and Procedures (AFTTP) 3-3.GA, *Guardian Angel Combat Fundamentals* and Air Force Handbook (AFH) 10-351, *Pararescue Procedures* for additional information.

4.3.1. At a minimum, units will maintain Category I equipment IAW the manufacturer's instructions and this manual. **(T-3)**

4.3.2. Category I equipment will be inspected for serviceability prior to each use, pre-deployment, post-deployment, exercises, temporary duty (TDY), and when transitioning between force generation cycles. **(T-3)**

4.3.3. Team equipment. Maintain a locally devised record-of-use log to document all inspections, care, and use of mountain operations equipment. **(T-3)** This requirement may be accomplished electronically but it is highly recommended that the log be maintained in “hard-copy” format and kept with the equipment items (e.g., ropes, carabiners, descenders, etc.) or kits (climbing bag, high-angle bag, etc.). Refer to Training Circular (TC) 3-97.61, *Military Mountaineering*, for an example rope log. All kits should have a list of contents and quantities attached in a conspicuous location. As a minimum, each log will contain:

4.3.3.1. Date placed into service. **(T-3)**

4.3.3.2. Local control number. **(T-3)**

4.3.3.3. Date of use/inspection date. **(T-3)**

4.3.3.4. Date of next inspection. **(T-3)**

4.3.3.5. Include manufacturer specific inspection requirements as applicable.

4.3.3.6. Inspector’s comments, as required.

4.3.3.7. Initials of inspector. **(T-3)**

4.3.4. Ropes. In addition to record of use log:

4.3.4.1. Record date of manufacture, date placed into service, and mandatory retirement date. **(T-3)**

4.3.4.2. Record unusual history such as falls or high degrees of tension. **(T-3)**

4.3.4.3. Ropes will be retired five years from the date placed into service or ten years from date of manufacture, whichever is first. **(T-3)**

4.3.4.4. Remove ropes from service after sustaining a severe fall ( $\geq$  a fall factor of 1.78), when they become excessively worn, frayed, or exceed the manufacturer’s recommended shelf or service life. **(T-3)**

4.3.5. Soft goods. Inspect webbing, cordellette, slings, daisy chains and harnesses as thoroughly as ropes. Unserviceable equipment will be marked and removed from service. **(T-3)**

4.3.5.1. Record date of manufacture, date placed into service, and mandatory retirement date. **(T-3)**

4.3.5.2. Soft goods will be retired five years from the date placed into service or ten years from date of manufacture, whichever is first. **(T-3)**

4.3.6. Hardware. Climbing hardware includes but is not limited to carabiners, pulleys, stitch plates, mechanical ascenders and descenders, technical rock protection, snow pickets, ice screws, etc. Hardware will be removed from service if:

4.3.6.1. Dropped from greater than 10 feet onto a hard surface (concrete, asphalt, rocks, etc.). (Items dropped from greater than 10 feet onto a soft surface will be closely inspected for damage and functionality). **(T-3)**

4.3.6.2. Dropped from greater than 50 feet regardless of surface. **(T-3)**

4.3.6.3. Exposed to forces exceeding its intended use or rating. **(T-3)**

4.3.6.4. Not operating in like new condition. **(T-3)**. **WARNING:** If a carabiner or other hardware serviceability is questionable, remove from service immediately and mark accordingly. **(T-3)**



## Chapter 5

### ENVIRONMENTAL REQUIREMENTS & CONSIDERATIONS

**5.1. Environmental Effects.** Operations in adverse terrain (e.g., mountain, glacier, snow, ice, and avalanche environments) induce many unique challenges, such as cold temperatures, travel in snow, ice, glacier, and avalanche conditions. This is compounded by the distinctive personal protective equipment required to operate safely and effectively, and the environmental effects on weapons, electronics, and communication equipment. Additional information can be found in AFTTP 3-3.GA, AFH 10-351, Army Techniques Publication (ATP) 3-90-97, *Mountain Warfare and Cold Weather Operations*, Training Circular (TC) 3-97.61, *Military Mountaineering, Mountaineering: The Freedom of the Hills, Guardian Angel Briefing Guide, Rigging for Rescue Technical Ropework Seminar Handbook, Staying Alive in Avalanche Terrain, Glacier Mountaineering*, and *The Peak Rope Rescue Guide*.

#### **5.2. General.**

5.2.1. Team briefings will include:

5.2.1.1. Weather patterns for duration of mission plus 72 hours. **(T-3)**

5.2.1.2. High/low temperatures at objective altitude and along route of travel. **(T-3)**

5.2.2. Mission planning and risk mitigation considerations.

5.2.2.1. Accessibility of objective, by land and air.

5.2.2.2. Current, forecasted, and historical weather patterns.

5.2.2.3. Terrain analysis and estimated environmental effects (see [Table 5.1](#)).

5.2.2.4. Identify danger areas/obstacles and elevation gain along route of travel.

5.2.2.5. Identify technical requirements. When missions involve technical aspects of mountain operations, decision making should be deferred to the climber with the highest level of qualification.

5.2.2.6. Estimate movement times and duration of operation (see [Table 5.1](#)).

5.2.2.7. Review procedures in applicable chapters of this manual, AFH 10-351, and *Mountaineering: The Freedom of the Hills* for anchors, ascending, descending, raising, lowering, litter rigging, emergency procedures, and avalanche procedures as required.

5.2.2.8. Topographical maps are recommended for all mountainous operations as the mountain environment lends itself to terrain following better than any other environment.

5.2.2.9. The team leader will know the experience, proficiency, strengths, and weaknesses of all team members involved in the operation. **(T-3)**

**Table 5.1. Risk Management Considerations for Operations Greater Than 72 Hours.**

<b>Altitude in Feet Mean Seal Level (MSL)</b>	<b>Risk</b>	<b>Mitigation</b>
8,000-14,000	Altitude sickness and decreased performance is common	Medications required. Consider pretreatment when rapid ascent to altitudes above 8,000 feet may occur. Avoid onset by limiting initial ascent to no higher than 8,000 feet then 1,000 feet per day thereafter.
14,000-18,000	Altitude sickness and decreased performance is the rule.	
>18,000	With acclimatization, climbers can function for short periods.	
<b>Terrain</b>	<b>Risk</b>	<b>Mitigation</b>
Exposed climbing	Ropes required for movement	PPE / Safety lines

**5.3. Personal Protective Equipment (PPE) Requirements and Individual Equipment Recommendations.** Climbers will be equipped with the items in this section identified as PPE. (T-3)

5.3.1. Mountain and roped rescue.

5.3.1.1. Capability to ascend and descend a vertical rope (e.g., belay device, ascenders, friction hitches, etc.) (PPE).

5.3.1.2. Helmet. Required when any potential of a dynamic fall exists (PPE).

5.3.1.3. Sit harness (PPE).

5.3.1.4. Gloves. Appropriate to protect from dynamic friction (PPE).

5.3.1.5. Personal retention lanyard/personal anchor system (commercial or manufactured) (PPE).

5.3.1.6. Anchoring capability (5m cordellette, sewn slings, and/or tubular nylon) (PPE).

5.3.1.7. Rope tool (e.g., knife, kook knife, trauma shears, etc.) (PPE).

5.3.1.8. Signaling capabilities (e.g., whistle, signal mirror, VS-17 panel, etc.) (PPE). **Note:** When performing civil search and rescue operations climbers should wear or have available a high visibility (bright red or orange) shell layer top.

5.3.1.9. Locking carabiners (5 recommended).

5.3.1.10. Non-locking carabiners (3 recommended).

5.3.1.11. Sewn sling (60 cm sewn spectra rated at 20 kilonewtons (kN) recommended).

5.3.1.12. Prusik-minding pulleys (2 recommended).

5.3.1.13. Eye protection (recommended).

5.3.1.14. Radio (recommended).

5.3.1.15. Global Positioning System (GPS)/compass (recommended).

5.3.2. Planned operations above 8,000 feet.

5.3.2.1. Glasses/goggles (tinted and clear) (PPE).

5.3.2.2. Hard shell top (breathable and wind/waterproof) (PPE).

- 5.3.2.3. Ultraviolet protection (e.g., sunscreen) (PPE).
- 5.3.2.4. Consider additional cold weather PPE.
- 5.3.3. Cold weather equipment items when temperatures are forecasted below 32° F.
  - 5.3.3.1. Base layer, top and bottom (PPE).
  - 5.3.3.2. Insulating layer, top (PPE).
  - 5.3.3.3. Shell layer. Breathable, wind/waterproof “hard shell” top and bottom (PPE).
  - 5.3.3.4. Insulating headgear (windproof recommended) (PPE).
  - 5.3.3.5. Gloves, base and outer layers (PPE).
- 5.3.4. Glacier. Individual glacier equipment is dependent on glacier characteristics and weather conditions. Climbers will be individually equipped to perform self-arrest, perform crevasse rescue, and ascend and descend a free-hanging vertical rope (e.g., belay device, ascenders, friction hitches, etc.). **(T-3)**
  - 5.3.4.1. Glasses/goggles (tinted to avoid snow blindness) (PPE).
  - 5.3.4.2. Self-arrest capability (e.g., ice axe, ski pole, etc.) (PPE).
  - 5.3.4.3. Boots compatible with snow travel aids (e.g., crampons, snowshoes, skis, etc.) (PPE).
  - 5.3.4.4. Travel aids appropriate for terrain (e.g., crampons, snowshoes, skis, skins, etc.) (PPE).
  - 5.3.4.5. Sit harness (PPE).
  - 5.3.4.6. Anchoring capability (e.g., ice screws/pickets, webbing, etc.) (PPE).
  - 5.3.4.7. Helmet (as required).
  - 5.3.4.8. Locking carabiners (5 recommended).
  - 5.3.4.9. Non-locking carabiners (3 recommended).
  - 5.3.4.10. Prusik minding pulleys with friction hitches (2 recommended).
  - 5.3.4.11. Headlamp (recommended).
  - 5.3.4.12. GPS/compass (recommended).
  - 5.3.4.13. Rope, 60 meters (8mm minimum diameter recommended).
- 5.3.5. Avalanche. Avalanche PPE will be carried at all times when traversing avalanche prone terrain or when any threat of avalanche exists. **(T-3)**
  - 5.3.5.1. Avalanche probe (PPE).
  - 5.3.5.2. Avalanche shovel (metal blade strongly recommended) (PPE).
  - 5.3.5.3. Avalanche beacon/transceiver (worn close to skin, under outer garment layers, turned on, and in transmit mode, arm’s length away from other communication devices) (PPE).
  - 5.3.5.4. Inclinator (one per team recommended).

5.3.5.5. Avalanche protective devices as required (Avalung, avalanche airbags, etc.).

#### **5.4. Cold Weather Considerations.**

5.4.1. Batteries have reduced operating times.

5.4.2. All electronics, including cables and cords, are prone to failure.

5.4.3. Weapons (mission dependent).

5.4.3.1. Weapons cleaning kit.

5.4.3.2. Use Clean, Lubricate, Protect (CLP) and Lubricant, Arctic Weapon (LAW) oil or dry lube for lubricating weapons (CLP freezes at -35° F, LAW freezes at -70° F). **(T-3)**

#### **5.5. Glacier Requirements and Considerations.**

5.5.1. Assess specific glacier characteristics and obstacles along intended route of travel.

5.5.2. Determine elevation of the objective and the firm zone for exposed ice glacier versus snow-covered glacier.

5.5.3. Team Leader will ensure all team members are briefed and proficient on ice axe self-arrest and team arrest procedures, including the four major sliding positions (head up/down and belly/ back), proper rope-up procedures for roped travel, crevasse rescue procedures for a fallen roped team member, and self-rescue procedures from a crevasse. **(T-3) WARNING:** To minimize the potential for training injuries, crampons should not be worn during practice ice axe self-arrests.

5.5.4. Glacier procedures. During glacier operations climbers will:

5.5.4.1. Only perform un-roped travel after careful assessment of conditions and risk management review. **(T-3)**

5.5.4.2. Wear crampons or have them readily available and carry an ice axe with appropriate tether when travelling on exposed ice glacier. **(T-3)**

5.5.4.3. Wear snow travel aids (e.g., skis, snowshoes, etc.) or have them readily available and be capable of self-arrest (e.g., ice axe, ski pole, etc.) when travelling on snow covered glacier. **(T-3)**

#### **5.6. Alpine (Snow and Avalanche).**

5.6.1. Avalanche terrain considerations.

5.6.1.1. Current and historical weather conditions are assessed for avalanche forecasting purposes.

5.6.1.2. Assess mission requirements and team capability in determining method and distance of movement.

5.6.2. Alpine/avalanche procedures.

5.6.2.1. All members will perform an avalanche beacon check prior to traveling into any area with avalanche potential. **(T-3)**

5.6.2.2. Prior to crossing an avalanche danger zone, the team will assess the threat and consider emergency egress routes, detours, or other mitigation strategies. **(T-3)** Avoid roping up in non-glacial avalanche terrain unless fall risks cannot otherwise be mitigated.

5.6.2.3. If caught in an avalanche, initiate use of any avalanche emergency equipment, keep ruck on, attempt to ditch skis/snowshoes and “swim” to stay on surface (see *Staying Alive in Avalanche Terrain*, AFH 10-351, AFTTP 3-3.GA, and *Mountaineering: The Freedom of the Hills* for further guidance).

5.6.2.4. When responding to an avalanche:

5.6.2.4.1. Team Leader will identify egress route(s) and assign a team member to monitor upslope conditions for further avalanche activity. **(T-3)**

5.6.2.4.2. Ensure each rescuer and each recovered victim’s beacon are set to receive until the last victim is located then immediately return all beacons to transmit.

5.6.2.4.3. Once a victim who requires digging out is located, to the max extent possible, begin digging towards victim from one and a half times the burial depth on the downhill side, on plane with the victim’s location.

## Chapter 6

### ROPED RESCUE

**6.1. General.** Roped rescue is dynamic in nature and incorporates technical rescue principles, adaptive mountain rescue procedures, and climbing fundamentals. Roped rescue operations should be conducted IAW AFTTP 3-3.GA, AFH 10-351, *Mountaineering: The Freedom of the Hills*, and this manual. Additional information can be found in ATP 3-90-97, TC 3-97.61, *Guardian Angel Briefing Guide*, *Rigging for Rescue Technical Ropework Seminar Handbook*, *Staying Alive in Avalanche Terrain*, *Glacier Mountaineering*, and *The Peak Rope Rescue Guide*.

6.1.1. Team Leaders will:

6.1.1.1. Assign roles and responsibilities for team members. **(T-3)**

6.1.1.2. Determines equipment to be worn during tactical/technical operations (e.g., Load Bearing Vest, Armor, etc.). **(T-3)**

6.1.1.3. Designates safety perimeter and briefs requirements for being tied-in to the anchor. **(T-3)**

6.1.1.4. Designates individual responsible for all safety checks. **(T-3)**

6.1.2. Control. Gives commands to lower/raise load. **(T-3)**

6.1.3. Belay Man. Belay Man is responsible for managing slack in a system, lowering personnel during descent, and/or taking in slack during ascents and hauls/raises. **(T-3)**

6.1.4. Edge Man. The edge man cleans and protects the edge and assists the edge transitions of the attendant and the load. **(T-3)**

6.1.5. Attendant. The attendant manages handling the patient and cleans route if necessary. **(T-3)**

6.1.6. Vector. May be used to direct main and safety line over the edge.

### 6.2. Briefing Requirements.

6.2.1. Mission objective. **(T-3)**

6.2.2. Technical operation. Type of system, focal point of entry/edge. **(T-3)**

6.2.3. Responsibilities. **(T-3)**

6.2.4. Communication plan. **(T-3)**

6.2.5. Risk management. **(T-3)**

6.2.6. Medical emergency action plan. **(T-2)**

6.2.7. Safety or “hands-free” devices and procedures that will be used. **(T-3)**

### 6.3. Risk Management Considerations.

6.3.1. Climber skill/experience level.

6.3.2. Safety line being used.

6.3.3. Slope angle.

6.3.4. Terrain surface/hazards/obstacles.

6.3.5. Amount of safety margin available with equipment.

#### 6.4. General Requirements.

6.4.1. Minimize potential shock loading. **(T-3)**

6.4.2. Assess and brief risk management prior to loading a system without a safety line. **(T-3)**  
**NOTE:** Proprietary single rope rescue systems (e.g., Trace and Adaptive Ropes (AR) kits) are authorized with appropriate training and after completing a risk management assessment.

6.4.3. A safety check or “whistle test” is required for all systems prior to applying a live load to the system. “Whistle test” implies a hands-free back up is in place. **(T-3)**

6.4.4. “Close” systems with a knot to prevent the end of the rope from feeding through the device and causing an accidental run out. **(T-3)**

6.4.5. Protect rope/webbing with edge protection when and where possible.

6.4.6. Evaluate need for a barrelman to negotiate obstacles.

6.4.7. For training, all climbers within 10 feet of an edge where a fall of 10 feet or greater, down a slope of 50° or greater is possible, must be tied in. **(T-3)**

6.4.8. Determine load size and calculate the static system safety factor required; a less than 10:1 static system safety factor will not be accepted without a careful risk management evaluation. AFH 10-351 and *Mountaineering: The Freedom of the Hills* contains techniques for these calculations for low, medium, and high-angle operations.

6.4.9. Select and construct anchors to support the intended dynamic load. **(T-3)**

6.4.10. Focus equalized anchor systems with an appropriate knot. **(T-3)** **WARNING:** Free running equalizing anchor systems are not authorized. **WARNING:** The angle between the outside legs of an anchor will be kept below 90°. At angles greater than 120° between legs, the force exerted on each anchor point exceeds the force exerted on the anchor by the load. This is especially important in anchors with only two legs. **WARNING:** When using artificial anchors such as spring-loaded camming devices (i.e., “friends”), ice screws, etc., a minimum of two anchors (may be single or multi-point), each meeting a 10:1 safety factor will be used. **(T-3)**

6.4.11. Main line and safety line should be interconnected at the litter yoke with a tandem knot.

6.4.12. Patients and barrelman will be secured to either the main or safety line through their harnesses. **(T-2)** **Note:** Harness may be a climbing harness or made with available webbing or suitable substitute that meets the intent of securing the patient.

6.4.13. For training, patients will have head and eye protection to avoid injury. **(T-3)**

6.4.14. Any time a progress capture device is employed, a tension release mechanism will be used to connect the device to the anchor (load releasing hitch (LRH), tied off belay device, etc.). **(T-3)** **Note:** A tension release mechanism is not required when employing a twin tension system (e.g., dual capability system, dual main rope rescue system, mirrored system).

## 6.5. Lowering Systems and Mechanical Advantage Requirements.

### 6.5.1. General.

6.5.1.1. A twin line system should be used for redundancy in high-angle terrain if rope damage is possible.

6.5.1.2. Personnel will be tied into the end of the rope. However, a triple-action locking carabiner may be used to secure personnel into the end of a rope if the situation warrants and risk management is assessed. **(T-3)**

### 6.5.2. Procedures.

6.5.2.1. Construct the system to meet lowering requirements, pay close attention to the fall line, focal point, and weight of load. **(T-3)**

6.5.2.2. Members will use an appropriate friction device for the expected loads. **(T-3)**

6.5.2.3. Use tandem prusiks appropriately sized for the rope diameter in use as back up for rescue loads. **(T-3) WARNING:** Only use rescue load rated mechanical rope grabs for back up to rescue load systems.

## 6.6. Haul Systems and Mechanical Advantage Requirements.

6.6.1. General. **WARNING:** If at any time the haul team meets unexpected resistance, (e.g., litter trapped on an overhang, a rope pinched in a crack, etc.) cease hauling immediately until the situation is identified and corrected. Be prepared to initiate a lower, if hung up.

6.6.1.1. Always consider a separate anchor with safety line for redundancy. If system strength is questionable, then a separate safety system must be utilized. **(T-3)**

6.6.1.2. Every attempt must be made to make sure that the haul line and safety line are protected from sharp edges or any other obstacles that may cause rope abrasion.

### 6.6.2. Procedures.

6.6.2.1. Anchors will be built with a 10:1 static system safety factor for anticipated working load (load plus haul force, e.g., if load is determined to be 2kN, then all equipment must be rated to 20kN or greater). **(T-3)**

6.6.2.2. A progress capture should be included between the load and the first pulley with a suitable anchor to handle the load (prusik with LRH, etc.).

## 6.7. Suspension Traverse Requirements.

6.7.1. Only rescue load rated static kernmantle rope will be used for conducting a suspension traverse, also known as a high line or aerial ropeway suspension system. **(T-3)** (A 30kN rating should be considered the minimum standard. See AFH 10-351 and *Mountaineering: The Freedom of the Hills* for an in-depth discussion on vector angles and resultant forces on ropes and anchors).



6.7.2. Sloping suspension traverses/high lines require a belay/tagline or mechanical advantage and also require tandem prusiks with an LRH attached in front of the brake rack or mechanical advantage to protect against a dynamic event. **(T-3) WARNING:** Traverse lines have extremely high forces as rope sag is eliminated. Forces on the anchors reach catastrophic levels as the rope angle approaches zero degrees rope sag. Each anchor must always be stronger than the traverse line.

## 6.8. Climbing Requirements.

6.8.1. Aid climbing techniques are recommended for roped rescue/recovery.

6.8.2. Roped climbing will be used whenever there is an immediate or obvious danger of a catastrophic fall. **(T-3)**

6.8.3. Climbers should establish protection so that a fall will not exceed 10 feet, to include rope ascensions.

6.8.4. Climber must be belayed. **(T-3)**

6.8.5. Base anchors and system selection on potential fall forces.

6.8.6. A dynamic rope should be used when a fall from above the highest anchor is possible. Dynamic ropes will bear the UIAA or CE symbols for single rope, half/double rope, and/or twin rope use. Ropes must be rated for single use to be utilized in a single rope system. **(T-3)**

## 6.9. Rappelling Requirements.

6.9.1. General. Helmets and gloves will be worn on all rappels. **(T-3)**

6.9.2. Procedures.

6.9.2.1. Orient the anchor focal point with the fall line prior to attaching the rappel rope.

6.9.2.2. Ensure rope has sufficient length to access the objective and tie a knot in the end to prevent accidental run out.

6.9.2.3. Use edge pro anywhere the rope may abrade.

6.9.2.4. Rappelers will connect harness to rope with weight appropriate friction device. **(T-3) WARNING:** Rappelers should use hands-free back up. If the hands-free back up will hinder operations, the mountain operator or mountain leader will apply risk management to determine use.

## Chapter 7

### PROCEDURES & RESTRICTIONS

**7.1. Medical Coverage Requirements.** Medical coverage must be present for all non-contingency mountain operations. **(T-1)** For training operations a minimum of two appropriately equipped and current Tactical Combat Casualty Care-Combat Lifesavers (TCCC-CLS) must be present. **(T-2)** The minimum certification requirement for DAF civilians to provide medical coverage is TCCC-CLS or Wilderness Emergency Medical Technician (W-EMT). **(T-2)**

**7.2. Medical Support Procedures:** Prior to conducting mountain operations training the team commander and/or team leader will:

7.2.1. Complete a detailed risk management assessment and ensure all personnel participating in the event have been briefed on the mitigation plan. **(T-2)**

7.2.2. Ensure that a medical emergency action plan is established, and all personnel are briefed on on-site medical care, primary treatment facility, contact procedures, and transport options. **(T-2)**

7.2.3. Assign primary and secondary medical responsibilities. **(T-2)** **Note:** Personnel providing medical coverage should be experienced with providing care in austere environments prior to being assigned medical duties. Medical personnel will:

7.2.3.1. Inventory medical supplies and ensure medical equipment is tested and functional prior to the start of training. **(T-2)**

7.2.3.2. Be equipped with emergency lifesaving and stabilization equipment with focused capabilities to treat traumatic injuries associated significant falls (i.e., a fall from greater than 15 feet, or from more than three times the patient's height). **(T-2)** Equipment will include, but is not limited to a medical kit, pelvic binder, femur traction splint, cervical collar, and a litter (e.g., Skedco®, ahkio sled, etc.). **(T-3)** When operationally feasible, additional medical equipment will include positive pressure oxygen and definitive spinal immobilization. **(T-3)** **Note:** Additional medical equipment may be staged with insertion, chase, and/or extraction vehicles.

7.2.3.3. Provide medical treatment until handoff to a higher level of care is accomplished. **(T-2)**

7.2.4. Training events conducted at civilian facilities (i.e., rock climbing gyms) are authorized and encouraged, provided that requirements in [paragraph 7.2.2](#) are accomplished prior to training start and an advanced life support level response can be coordinated in under 30 minutes.

**7.3. Medical Support at Altitude (above 8,000 Mean Sea Level (MSL)).**

7.3.1. A Flight Surgeon should be consulted during the planning phase of any mountain operations mission, operational or training, to review the current treatment for acute mountain sickness (AMS), high altitude cerebral edema (HACE), and high altitude pulmonary edema (HAPE). The Flight Surgeon will determine whether preventative medications should be used and prescribe preventative and/or treatment medications if appropriate.

7.3.2. When operating above 8,000 feet MSL, teams should be equipped with medications to counter and treat AMS, HAPE, and HACE. Reference *Pararescue Medical Operations Handbook* for types/dosages. **Note:** 70-80% of respiratory acclimatization occurs within 7 days at altitudes up to 18,000 feet.

7.3.3. The use of altitude medications to speed acclimatization is discouraged whenever a reasonable ascent profile, 1,000 feet (300 meters) a day of net elevation gain, can be achieved. Altitude medications should only be used to speed the body's adaption to altitude when operational constraints dictate, or the climber has experienced high-altitude illness previously. Medications used to prevent high-altitude illness must be ground tested and documented in the climber's medical record prior to use for training missions. **(T-2)** During operational missions, the use of acclimatization medications by climbers who have not previously ground tested them is determined by the unit assigned Flight Surgeon.

7.3.4. Mountain operations above 14,000 feet should have oxygen and a portable hyperbaric chamber readily available (inflatable pressure bag such as Gamow, Certec, etc., but not to be confused with a portable hyperbaric oxygen chamber such as the Emergency Evacuation Hyperbaric Stretcher). AMS, HAPE, and HACE may occur at altitudes as low as 8,000 feet and availability of these resources should be considered at altitudes below 14,000 feet in the setting of rapid ascent, vigorous exertion, or when descent is not an option. These items do not need to be carried by the team and can be cached in a resupply location where rapid acquisition is feasible. These items should only be used by trained and experienced personnel on a temporary or emergency basis when standard medical care is not available and immediate descent is not practical. Their use should not delay descent from altitude. The portable hyperbaric chamber should only be pressurized with ambient air, not supplemental oxygen.

**7.4. Mishap and Incident Reporting and Investigations.** Units must report mountain operations-related mishaps to the AMPM and through Air Force Occupational Safety channels IAW DAFI 91-204, *Safety Investigations and Reports*, and DAFMAN 91-224, *Ground Safety Investigation and Hazard Reporting*. **(T-1)** Mishap and incident reporting is a unit level responsibility, and timely reporting of mishaps and incidents is essential. The AFSOC MMPM will ensure all AFSOC-related mountain operations mishaps are reported to USSOCOM IAW USSOCOM M 350-34. **(T-0)**

7.4.1. Investigations are second in priority only to medical care for injured personnel. The primary purpose of an investigation is to identify safety-related factors that have bearing on the conduct of mountain operations, and to consider changes to administration, qualifications, standards, requirements, currency, training, and procedures, when appropriate. Safety investigations exist to prevent future mishaps.

7.4.2. Major mishaps, including fatalities and serious injuries, will likely require an accident, or legal, investigation be conducted IAW AFI 51-307, *Aerospace and Ground Accident Investigations*. The purpose of an accident investigation is to inquire into all the facts and circumstances surrounding accidents, to prepare a publicly releasable report, and to obtain and preserve all available evidence for use in litigation, claims, disciplinary action, and adverse administrative action.

7.4.3. A mishap is defined as an unplanned occurrence, or series of occurrences, that result in death, damage, injury, or occupational illness. Any event that meets Department of Defense Instruction (DoDI) 6055.07, *Mishap Notification, Investigation, Reporting, and Record Keeping*, or discipline-specific safety manual criteria qualifies as a mishap and must be reported and investigated IAW DAFI 91-204 and DAFMAN 91-224. **(T-1)** Reference the Wing Safety offices and AFMAN 91-224, *Ground Safety Investigation and Hazard Reporting*, for additional information and support.

7.4.4. An incident is defined as a planned or unplanned occurrence or series of occurrences resulting in injury or damage that does not meet mishap reporting criteria.

7.4.5. Near-mishaps are defined as acts or events where injury or equipment damage was avoided by mere chance, while hazards are defined as unsafe acts or conditions that degrade safety and increase the probability of a mishap. Units should report near-mishaps and hazards to the MMPM to centralize the collection, dissemination, and reporting of mountain operations safety statistics. Self-evaluation and self-reporting of near mishaps is a key measure of professionalism and demonstrates concern for the greater AFSPECWAR mountain operations community.

7.4.6. On direction from the senior ranking individual, and in coordination with MAJCOM Chief of Safety, mountain operations equipment that may have contributed to a mishap must be impounded, secured, and kept un-tampered IAW DAFI 91-204, DAFMAN 91-224, and the installation's Mishap Response Plan. **(T-1)** Baseline information to be collected for investigations includes:

- 7.4.6.1. Personnel involved and assigned duties.
- 7.4.6.2. Planning documentation and event timeline.
- 7.4.6.3. Training records.
- 7.4.6.4. Equipment used.
- 7.4.6.5. Equipment inspection/maintenance logs.
- 7.4.6.6. Equipment configuration.

JAMES C. SLIFE, Lt Gen, USAF  
Deputy Chief of Staff, Operations

**Attachment 1****GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION*****References***

DoDI 6055.07, *Mishap Notification, Investigation, Reporting, and Record Keeping*, 6 June 2011

DAFPD 10-35, *Air Force Special Warfare*, 5 January 2021

DAFI 91-204, *Safety Investigations and Reports*, 10 March 2021

DAFI 36-2670, *Total Force Development*, 25 June 2020

DAFMAN 91-224, *Ground Safety Investigation and Hazard Reporting*, 21 January 2022

AFI 33-322, *Records Management and Information Governance Program*, 28 July 2021

AFI 51-307, *Aerospace and Ground Accident Investigations*, 18 March 2019

AFI 90-802, *Risk Management*, 1 April 2019

AFMAN 10-3500V1, *Air Force Special Warfare Training Program*, 1 June 2022

AFMAN 10-3500V2, *Air Force Special Warfare Standardization and Evaluation*, 1 June 2022

AFH 10-351, *Pararescue Procedures*, 15 December 2022

AFTTP 3-3.GA, *Guardian Angel Combat Fundamentals*, 19 November 2021

ATP 3-21.50, *Infantry Small-Unit Mountain and Cold Weather Operations*, August 2020

ATP 3-90.97, *Mountain Warfare and Cold Weather Operations*, April 2016

TC 3-97.61, *Military Mountaineering*, July 2012

USSOCOM M 350-34, *Special Operations Forces Baseline Interoperable Standards—Mountaineering*, 7 January 2021

*Guardian Angel Briefing Guide VI.0*, November 2021

*Pararescue Medical Operations Handbook 8th Edition*, January 2021

*Mountaineering: The Freedom of the Hills, Ninth Edition*, 5 October 2017

*Rigging for Rescue Technical Ropework Seminar Handbook*

*Staying Alive in Avalanche Terrain*, 2001

*The Peak Rope Rescue Guide*

*Glacier Mountaineering*, 2009

***Adopted Forms***

AF Form 623A, *On-The-Job Training Record – Continuation Sheet*

AF Form 803, *Report of Task Evaluations*

DAF Form 847, *Recommendation for Change of Publication*

AF Form 1035, *AFSPEWAR Evaluation Form*

AF Form 1098, *Special Task Certification and Recurring Training*

***Prescribed Forms***

None

***Abbreviations and Acronyms***

**AETC**—Air Education and Training Command

**AFH**—Air Force Handbook

**AFI**—Air Force Instruction

**AFMAN**—Air Force Manual

**AFMC**—Air Force Materiel Command

**AFS**—Air Force Specialty

**AFSAS**—Air Force Safety Automated System

**AFSOC**—Air Force Special Operations Command

**AFSPECWAR**—Air Force Special Warfare

**AFTTP**—Air Force Tactics, Techniques, and Procedures

**AMPM**—Air Force Special Warfare Mountain Operations Program Manager

**AMS**—Acute Mountain Sickness

**AR**—Adaptive Rope Kit

**ARMS**—Aviation Resource Management System

**ATP**—Army Techniques Publication

**AUL**—Approved-for-Use-List

**CCT**—Combat Control

**CE**—European Committee for Standardization

**CFETP**—Career Field Education and Training Plan

**CFM**—Career Field Manager

**CLP**—Clean, Lubricate, Protect Oil

**CLS**—Combat Life Saver

**CMR**—Combat Mission Ready

**CRO**—Combat Rescue Officer

**DAF**—Department of the Air Force

**DAFI**—Department of the Air Force Instruction

**DAFPD**—Department of the Air Force Policy Directive

**DoD**—Department of Defense

**DoDI**—Department of Defense Instruction  
**GA**—Guardian Angel Weapon System  
**GPS**—Global Positioning System  
**HACE**—High Altitude Cerebral Edema  
**HAPE**—High Altitude Pulmonary Edema  
**IAW**—In Accordance With  
**kN**—Kilonewton  
**LAW**—Lubricant, Arctic Weapon Oil  
**LoX**—Letter of Qualifications  
**LRH**—Load Releasing Hitch  
**MAJCOM**—Major Command  
**MMPM**—MAJCOM Mountain Operations Program Manager  
**MSL**—Mean Sea Level  
**NAVSPCWAR**—Naval Special Warfare Command  
**NFPA**—National Fire Prevention Agency  
**NSWC**—Naval Surface Warfare Center  
**NSN**—National Stock Number  
**OJT**—On-the-Job Training  
**OPR**—Office of Primary Responsibility  
**PJ**—Pararescue  
**POC**—Point of Contact  
**PPE**—Personal Protective Equipment  
**QTP**—Qualification Training Plan  
**RDT&E**—Research, Development, Testing, and Evaluation  
**SERE**—Survival, Evasion, Resistance, and Escape  
**SIB**—Safety Investigation Board  
**SR**—Special Reconnaissance  
**STO**—Special Tactics Officer  
**SWMS**—Special Warfare Mission Support  
**TACP**—Tactical Air Control Party  
**TC**—Training Circular  
**TCCC**—Tactical Combat Casualty Care

**TDY**—Temporary Duty

**T.O.**—Technical Order

**TTP**—Tactics, Techniques and Procedures

**UGT**—Upgrade Training

**UIAA**—International Climbing and Mountaineering Federation

**USMC**—United States Marine Corps

**USSOCOM**—United States Special Operations Command

**USSOCOM M**—United States Special Operations Command Manual

**W-EMT**—Wilderness Emergency Medical Technician

### *Office Symbols*

**AF/A3S**—Air Force Special Warfare

**AF/SE**—Air Force Chief of Safety

**AF/SG**—Air Force Surgeon General

### *Terms*

**Air Force Specialty**—A group of manpower positions requiring common qualifications. Each Air Force specialty has a title and a code.

**Category I**—Life-support mountain operations equipment; Category I is any piece of equipment required to provide a safe, controlled environment for a climber by satisfying the life support requirements of the intended operation (e.g., ropes, hardware used in rigging, etc.).

**Category II**—Non-life support mountain operations equipment; Category II is any piece of equipment (e.g., snowshoes, packs, sleds, etc.) that aids operational capability but is not essential for life support.

**Certification**—Procedure used to document competency in a particular task. Not interchangeable with qualification, which requires an evaluation documented on AF Form 1035 or AF Form 803.

**Climber**—A generic term used to encompass personnel who are qualified to perform mountain operations, or those participating in training under the supervision of qualified personnel.

**Commercial Off-the-Shelf**—A commercially available training, education, and professional development event or planned series of the same event, activity, service or material requiring no modification prior to use. Such training may occur on or off the installation and may include non-federal civilians.

**Deliberate Risk Management**—The pre-mission or activity planning, which involves the complete formal application of the 5-Step risk management process, including an in-depth planning process (hazard identification, detailed data research, diagram and analysis tools, formal testing, and long-term tracking of the risks associated with an operation, activity, or system).

**Deviation**—The action of doing something that is different from the usual or common way of behaving (i.e., not adhering to the contents of AFMAN 10-3507).



**Evaluator**—An AFSPECWAR Instructor who has been designated to conduct AFSPECWAR evaluations or a Task Certifier qualified to conduct third party evaluations.

**Event**—A broad term used to describe an occurrence, or series of occurrences, or a condition which has implications for the safety community. Events include Mishap, Nuclear Surety, Incident, Hazard, and Safety Study (DAFI 91-204).

**Hazard**—An unsafe act or condition that increases the probability of injury, illness, or death of personnel, damage to or loss of equipment or property, or mission degradation.

**Incident**—A planned or unplanned occurrence or series of occurrences resulting in injury or damage that does not meet Mishap or Nuclear Surety reporting criteria (DAFI 91-204).

**Mishap**—An unplanned occurrence, or series of occurrences, that results in damage to DoD property; occupational illness of DoD personnel; injury to on- or off-duty DoD military personnel; injury to on-duty DoD civilian personnel; or damage to public or private property, or injury or illness to non-DoD personnel, caused by DoD activities (DAFI 91-204).

**Mountain Operations**—Operations that expose personnel to technical and adverse terrain (e.g., alpine, glacier, canyon, river, etc.) with environmental hazards (e.g., high altitude, vertical obstacles, extreme temperature and weather changes, etc.) that obstruct movement, where risk and mobility increase proportionally, and safety is dependent on technical knowledge and proficiency in specialized tactics, techniques, procedures, and equipment.

**Qualification**—Designation arising from graduating an approved course or a successful evaluation, documented on an AF Form 1035 or AF Form 803 that allows a member to perform specified duties.

**Prusik**—A friction hitch or knot used to attach a loop of cord around a rope.

**Risk**—The probability and severity of loss or adverse impact from exposure to various hazards.

**Risk Management**—The systematic process of identifying hazards, assessing risk, making control decisions, implementing control decisions, and supervising and reviewing the activity for effectiveness.

**Safety**—The programs, risk management activities, and organizational and cultural values dedicated to preventing injuries and accidental loss of human and material resources, and to protecting the environment from the damaging effects of DoD mishaps.

**Static System Safety Factor**—The ratio between the breaking strength of a component or system to the force being applied to it when static.

**Validate**—To make something officially acceptable or approved, especially after examining it.