

## Chapter 2

# Command and Control



In the mountains, major axes of advance are limited to accessible valleys and often separated by restrictive terrain. The compartmented nature of the terrain makes it difficult to switch the effort from one axis to another or to offer mutual support between axes. The battle to control the major lines of communications of Level I develops on the ridges and heights of Level II. In turn, the occupation of the dominating heights in Level II may leave a force assailable from the restrictive terrain of Level III. Each operational terrain level influences the application of tactics, techniques, and procedures necessary for successful operations.

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In mountainous terrain, it is usually difficult to conduct a coordinated battle. Engagements tend to be isolated, march columns of even small elements extremely long, and mutual support difficult to accomplish. Command and control of all available assets is best achieved if command posts are well forward. However, the mountainous environment decreases the commander's mobility. Therefore, commanders must be able to develop a clear vision of how the battle will unfold, correctly anticipate the decisive points on the battlefield, and position themselves at these critical points.

The success of a unit conducting mountain operations depends on how well leaders control their units. Control is limited largely to a well-thought-out plan and thorough preparation. Boundaries require careful planning in mountain operations. Heights overlooking valleys should be included in the boundaries of units capable of exerting the most influence over them. These boundaries may be difficult to determine initially and may require subsequent adjustment.

During execution, leaders must be able to control direction and speed of movement, maintain proper intervals, and rapidly start, stop, or shift fire. In the mountains, soldiers focus mainly on negotiating difficult terrain. Leaders, however, must ensure that their soldiers remain alert for, understand, and follow signals and orders. Although in most instances audio, visual, wire, physical signals, and messengers are used to maintain control, operations may be controlled by time as a secondary means. However, realistic timetables must be based on thorough reconnaissance and sound practical knowledge of the mountain battlefield.

Commanders must devote careful consideration to the substantial effect the mountain environment may have on systems that affect their ability to collect, process, store, and disseminate information. Computers, communications, and other sophisticated electronic equipment are usually susceptible to jars, shocks, and rough handling associated with the rugged mountain environment. They are also extremely sensitive to the severe cold often associated with higher elevations. Increased precipitation and moisture may damage electronic components, and heavy amounts of rain and snow, combined with strong surface winds, may generate background electronic interference that can reduce the efficiency of intercept/direction finding antennas and ground surveillance radars. Localized storms with low sustained cloud cover reduce the effectiveness of most imagery intelligence (IMINT) platforms, to include unmanned aerial vehicles (UAVs). The collective effect of mountain weather and terrain diminishes a commander's ability to achieve shared situational understanding among his subordinates. However, increased use of human intelligence (HUMINT), clear orders and intents, and leaders capable of exercising initiative, allow commanders to dominate the harsh environment of a mountain area of operations.

As in any environment, mountain operations pose both tactical and accident risks. However, since most units do not routinely train for or operate in the mountains, the level of uncertainty, ambiguity, and friction is often higher than in less rugged environments. Commanders must be able to identify and assess hazards that may be encountered in executing their missions, develop and implement control measures to eliminate unnecessary risk, and continuously supervise and assess to ensure measures are properly executed and remain appropriate as the situation changes. Although risk decisions are the commanders' business, staffs, subordinate leaders, and individual soldiers must also understand the risk management process and must continuously look for hazards at their level or within their area of expertise. Any risks identified (with recommended risk reduction measures) must be quickly elevated to the chain of command (see FM 3-100.14).

## **SECTION I – ASSESSMENT OF THE SITUATION**

2-1. Although higher-elevation terrain is not always key, the structure of a mountain area of operations (AO) often forms a stairway of key terrain features. Identification and control of dominant terrain at each operational terrain level form the basis for successful mountain maneuver. Key terrain features at higher elevations often take on added significance due to their inaccessibility and ease of defense. To maintain freedom of maneuver, commanders must apply combat power so that the terrain at Levels II and III can be exploited in the conduct of operations. Successful application of this concept requires commanders to think, plan, and maneuver vertically as well as horizontally.

2-2. Mountain operations usually focus on lines of communication, choke points, and dominating heights. Maneuver generally attempts to avoid strengths, envelop the enemy, and limit his ability to effectively use the high ground. Major difficulties are establishing boundaries, establishing and maintaining communications, providing logistics, and evacuating wounded. Throughout the plan, prepare, and execute cycle, commanders must continuously assess the vertical impact on the mission, enemy, terrain and weather, troops and support available, time available, civil considerations (METT-TC).

### **HISTORICAL PERSPECTIVE**

#### **Importance of Controlling Key Terrain:**

#### **Mustafa Kemal at Gallipoli (April 1915)**

On 25 April 1915, the Allies launched their Gallipoli campaign. However, LTC Mustafa Kemal's understanding of the decisive importance of the hilly terrain, his grasp of the enemy's overall intent, and his own resolute leadership preserved the Ottoman defenses. His troops seized the initiative from superior forces and pushed the Allied invasion force back to its bridgehead. The result was nine months of trench warfare, followed by the Allies' withdrawal from Gallipoli.

German Fifth Army Commander General von Sanders expected a major Allied landing in the north, at Bulair. The British, however, were conducting a feint there; two ANZAC divisions were already landing in the south at Ari Burnu (now known as "ANZAC cove") as the main effort. The landing beaches here were hemmed by precipitous cliffs culminating in the high ground of the Sari Bair ridge, a fact of great importance to the defense. Only one Ottoman infantry company was guarding the area. Although prewar plans had established contingencies for using 19<sup>th</sup> ID, Kemal, the division commander, had received no word from his superiors regarding the developing scenario. Nevertheless, understanding that a major Allied landing could easily split the peninsula, he decided that time was critical and set off for Ari Burnu without waiting for his senior commander's approval. In his march toward Ari Burnu that morning, he recognized that the hilly terrain in general and the Sari Bair ridge in particular were of vital strategic importance: if the enemy captured this high ground they would be in an excellent position to cut the peninsula in half.

Kemal now engaged the enemy. He impressed upon his men the importance of controlling the hilltops at all costs, issuing his famous order: "I am not ordering you to attack. I am ordering you to die. In the time it takes us to die, other forces and commanders can come and take our place." Despite being outnumbered three-to-one, the Turkish counterattack stabilized their position and prevented the Allies from capturing the Sari Bair ridge. Nightfall brought about a lull in the fighting. There was some sniping and a few local encounters on 26 April, and on 27 April Kemal finally received major reinforcements. The front stabilized and the opposing armies settled down into trench warfare. On 16 January 1926, the Allies admitted defeat and withdrew.

The 19<sup>th</sup> ID's counterattack, which prevented the ANZAC from establishing themselves on the Sari Bair ridge, may well have decided the outcome of the entire Gallipoli campaign. Despite his lack of situational knowledge, Kemal instinctively understood the enemy's intent and, recognizing the importance of controlling the hilltops and ridgelines, was committed to concentrating his combat power to seize and hold this key terrain.

Compiled from "The Rock of Gallipoli," *Studies of Battle Command*, George W. Gawrych

## MISSION

2-3. Mission analysis must include the spatial and vertical characteristics of the AO. Although defeating the enemy continues to be the basic objective of tactical operations, the task of controlling specific operational terrain levels will be paramount. At brigade level and below, major tactical objectives are normally translated into tasks pertaining to seizing, retaining, or controlling specific dominating heights at either Level II or Level III. Therefore, it is imperative to identify the tasks and assets necessary to access each operational terrain level.

2-4. At any operational terrain level, defending and delaying are easier at de-files, while attacking is more difficult. Due to the compartmented terrain, units usually execute offensive missions by conducting several simultaneous

smaller-scale attacks, utilizing the full height, width, and depth of their area of operations. Consequently, commanders must always consider the impact of decentralization on security.

2-5. One method of maintaining freedom of action is to seize or hold key terrain. In the mountains, key terrain is frequently identified as terrain that is higher than that held by the enemy. Seizing this terrain often depends on long and difficult envelopments or turning movements. Therefore, the specified and implied tasks associated with mobility and sustainment, as well as command and control, must be considered in terms of their vertical difficulty.

## ENEMY

2-6. An enemy will normally position forces in depth and height along likely avenues of approach. Mountain terrain facilitates wide dispersal, allowing relatively small units to hold dominant terrain in a connected system of strong points. To prevent bypassing and envelopment attempts, the enemy may adopt a many-tiered, perimeter defense. Aside from the relative size of forces, the type of enemy units and their equipment must be compared with those of friendly forces, to include a comparison of the suitability of forces, tactics, and training. When considering the enemy's ability to operate in mountainous terrain, commanders should consider how well the enemy can accomplish the tasks and actions listed in Figure 2-1. Again, in analyzing both enemy and friendly factors during mountain operations, the vertical, as well as the horizontal, perspective should be fully integrated into all aspects of the assessment.

- **Utilize the environment to his advantage**
- **Conduct air operations**
- **Conduct decentralized operations**
- **Utilize the terrain in Levels II and III**
- **Employ obstacles or barriers to restrict maneuverability**
- **Conduct limited-visibility operations**
- **Sustain his maneuver elements**

**Figure 2-1. Factors Affecting Assessment of the Enemy Situation**

2-7. As in all military operations, terrain analysis involves observation and fields of fire, cover and concealment, obstacles, key terrain, and avenues of approach (OCOKA). Terrain often influences the conduct of operations more in the mountains than on flatter terrain. The mountains form the nonlinear and vertical structure of the battlefield, and the influences of geography and climate dictate the extent to which commanders modify tactics. Examples of these difficulties are often encountered in the concentration of forces, as well as in the maintenance of command and control.

## TERRAIN AND WEATHER

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2-8. In the mountains, as elsewhere, surprise is easier to achieve for the force that knows the terrain better and has the skills and equipment necessary to achieve greater mobility. The appropriate use of vertical terrain improves the element of surprise if the terrain has been analyzed properly to determine the best means to counter the enemy's reactions. Once the commander decides

on a preliminary course of action, he should immediately initiate a detailed terrain reconnaissance.

2-9. In a mountainous environment, the terrain normally favors the defender and necessitates the conduct of limited visibility operations. Highly trained units can achieve significant tactical gains and decisive victories by exploiting limited visibility. However, limited visibility operations in mountainous terrain require precise planning, careful daylight reconnaissance, exceptionally good command and control, and a high degree of training. Imaginative and bold limited visibility operations can minimize the advantage of terrain for the defender and shift the balance of combat power to the side that can best cope with or exploit limited visibility.

### **OBSERVATION AND FIELDS OF FIRE**

2-10. Although mountainous terrain generally permits excellent long-range observation and fields of fire, steep slopes and rugged terrain affect a soldier's ability to accurately estimate range and frequently cause large areas to be hidden from observation. The existence of sharp relief and dead space facilitates covert approaches, making surveillance difficult despite such long-range observation. Four factors that influence what can be seen and hit in mountainous terrain are listed in Figure 2-2.

- 1. The ability to observe and identify targets in conditions of bright sunlight**
- 2. The ability to estimate range in clear air**
- 3. The ability to apply wind corrections**
- 4. The ability to shoot accurately up and down vertical slopes**

**Figure 2-2. Factors Affecting Observation and Fields of Fire**

### **COVER AND CONCEALMENT**

2-11. The identification and proper use of the cover and concealment provided by mountainous terrain are fundamental to all aspects of mountain operations. The ridge systems found in Level II may provide covert approaches through many areas that are hidden from observation by the vegetation and relief. The difficulties a force encounters in finding available cover and concealment along ridges are fewer than those on the peaks, especially above the timberline. Uncovered portions of an approach leave a force exposed to observation and fire for long periods. The enemy can easily detect movement in this region, leaving commanders with three primary options to improve cover and concealment:

1. Identify and exploit avenues of approach the enemy would consider unlikely, due to their difficult ascent or descent.
2. Negotiate routes during periods of limited visibility.
3. Provide overwhelming route security.

### **OBSTACLES**

2-12. Obvious natural obstacles include deep defiles, cliffs, rivers, landslides, avalanches, crevices, and scree slopes, as well as the physical terrain of the mountains themselves. Obstacles vary in their effect on different forces. Commanders must evaluate the terrain from both the enemy and friendly

force perspective. They must look specifically at the degree to which obstacles restrict operations, and at the ability of each force to exploit the tactical opportunities that exist when obstacles are employed. Man-made obstacles used in conjunction with restrictive terrain are extremely effective in the mountains; however, their construction is very costly in terms of time, materiel, transportation assets, and labor. Commanders must know the location, extent, and strength of obstacles so that they can be incorporated into their scheme of maneuver.

### **KEY TERRAIN**

2-13. Key terrain generally increases in importance with an increase in elevation and a decrease in accessibility. In the mountains, however, terrain that is higher than that held by the opposing force is often key, but only if the force is capable of fighting there. A well-prepared force capable of maneuver in rugged terrain can gain an even greater advantage over an ill-prepared enemy at higher elevation levels.

2-14. The vast majority of operations in the mountains requires that the commander designate decisive terrain in his concept of operations to communicate its importance to his staff and subordinate commanders. In operations over mountainous terrain, the analysis of key and decisive terrain is based on the identification of these features at each of the three operational terrain levels. There are few truly impassable areas in the mountains. The commander must recognize that what may be key terrain to one force may be an obstacle to another force. He must also recognize that properly trained combatants can use high obstructing terrain as a means to achieve decisive victories with comparatively small-sized combat elements.

### **AVENUES OF APPROACH**

2-15. In mountainous terrain, there are few easily accessible avenues of approach, and they usually run along valleys, defiles, or the crests and spurs of ridges. This type of geography allows the defender to economize in difficult terrain and to concentrate on dangerous avenues of approach. A typical offensive tactic is to conduct a coordinated assault with the main effort along accessible avenues of approach, and supporting efforts by one or more maneuver elements on difficult and unexpected avenues of approach. Normally, high rates of advance and heavy concentration of forces are difficult or impossible to achieve along mountainous avenues of approach. Relief features may create large areas of dead space that facilitate covert movement. Units may use difficult and unlikely avenues of approach to achieve surprise; however, these are extremely high-risk operations and are prone to failure unless forces are well trained and experienced in mountaineering techniques. In mountainous terrain, the analysis of avenues of approach should be based on a thorough reconnaissance and evaluated in terms of the factors listed in Figure 2-3 on page 2-8.

### **WEATHER**

2-16. As discussed in Chapter 1, weather and visibility conditions in the mountainous regions of the world may create unprecedented advantages and disadvantages for combatants. To fight effectively, commanders must acquire

accurate weather information about their AO. Terrain has a dominant effect on local climate and weather patterns in the mountains. Mountainous areas are subject to frequent and rapid changes of weather, including fog, strong winds, extreme heat and cold, and heavy rain or snow. Thus, many forecasts that describe weather over large areas of terrain are inherently inaccurate.

Commanders must be able to develop local, terrain-

based forecasts by combining available forecasts with field observations (local temperature, wind, precipitation, cloud patterns, barometric pressure, and surrounding terrain). Forecasting mountain weather from the field improves accuracy and enhances the ability to exploit opportunities offered by the weather, while minimizing its adverse effects (see Appendix B).

- **Ability to achieve surprise**
- **Vulnerability to attack from surrounding heights**
- **Ability to provide mutual support to forces on other avenues of approach**
- **Effect on rates of advance**
- **Effect on command and control**
- **Potential to accommodate deception operations**
- **Ability to support necessary CS and CSS operations**
- **Access to secure rest and halt sites**
- **Potential to fix the enemy and reduce the possibility of retreat**

**Figure 2-3. Factors Affecting Analysis of Avenues of Approach**

## **TROOPS AND SUPPORT AVAILABLE**

2-17. Commanders must assess the operational and tactical implications of the restrictive environment on mobility, protection, firepower, and logistics. The complex task of arranging activities in time, space, and purpose requires commanders to fully understand the impact of elevation, weather, and visibility on the capabilities of his subordinate elements and relative combat power. Mountainous terrain and weather can greatly enhance the relative combat power of defending forces and, conversely, it can drastically reduce those of the attacking forces. For example, an infantry battalion may be inadequate to defeat a defending infantry company in the mountains. Instead, an infantry battalion may only be capable of defeating a well-positioned infantry platoon. However, commanders must carefully consider each unique situation and weigh all tangible and intangible aspects of combat power (maneuver, firepower, leadership, protection, and information) when comparing strengths and determining the forces necessary to accomplish the mission.

2-18. Commanders must also assess the proper mix of heavy and light forces that capitalizes on the unique strengths that each type of force can bring to mountain operations while minimizing their limitations. While generally complicating command and control, an appropriate mix allows commanders more flexibility in the synchronization of their operations. Additionally, the difficulty providing combat support and combat service support for mountain operations must be evaluated to determine if the proportion of support troops to combat troops is sufficient.

2-19. Prior to and throughout an operation, commanders must continually assess the effect that the rugged mountain environment and sustained combat operations has on the ability of their soldiers to accomplish the mission.



Commanders may need to slow the pace of their operation, transition to the defense for short periods, or rotate units to ensure that their soldiers are physically capable of striking effectively at decisive times and locations. Too often, commanders consider only the operational readiness (OR) rate of equipment and logistics levels when determining their overall ability to continue offensive actions. Failure to consider this intangible human aspect may result in increased loss of lives and mission failure.

2-20. Vertical operations are an integral part of mountain operations and are one means to improve the success of decisive engagements. Commanders must review the state of training of their units to ensure they are adequately prepared to maneuver and fight at various elevations. Increased requirements for aviation support require aviation units to be capable of operating in the specific mountain environment. Units must also have sufficient numbers of pathfinders and trained air assault personnel to select and mark landing zones (LZs) and prepare sling loads.

## TIME AVAILABLE

2-21. In the mountains, proper timing is fundamental to creating opportunities to fight the enemy on favorable terms. Restrictive terrain, weather, the accumulation of chance errors, unexpected difficulties, and the confusion of battle increase the time necessary to assemble, deploy, move, converge, and mass combat power, effectively decreasing the amount of time available to plan and prepare. To optimize the time available, commanders must continuously evaluate the impact of reduced mobility caused by the weather and terrain. At times, commanders may need to conduct a tactical pause to facilitate the concentration of combat power at a decisive point. However, they must consider time with respect to the enemy as time available is always related to the enemy's ability to execute his own plan, prepare, and execute cycle. Figure 2-4 summarizes the time considerations that are different from or greater than those encountered on flatter terrain.

- **Adaptability of plans to the terrain and varying weather**
- **Increased time needed to conduct reconnaissance, execute movements, and synchronize events on the battlefield**
- **Significant variance in the number of hours of visibility with season and elevation**

**Figure 2-4. Factors Affecting Time Available**

## CIVIL CONSIDERATIONS

2-22. Generally, civilian population centers will be located at the lower elevations of Level I close to sources of water and along major lines of communications. Refugees and displaced civilians may increase congestion on the already limited road and trail networks normally found in mountainous environments, further complicating maneuver and sustaining operations.

2-23. Commanders must also consider the impact of operations on the often-limited civilian resources available in the mountains. The wisdom of using local resources to lighten in-theater supply requirements must be balanced

against the impact on civilians and their local economy. While the purchase of goods and services from the local economy is generally welcomed, it may serve to inflate prices and make it impossible for local civilians to purchase their own scarce and needed supplies.

2-24. In mountainous regions, commanders often encounter a populace of diverse political and ethnic orientation that may support, oppose, or be ambivalent to US operations or the presence of US forces. Depending on friendly force objectives, commanders may conduct public relations, civil affairs, humanitarian assistance, and psychological operations (PSYOP) to influence perceptions and attitudes of neutral or uncommitted parties. Even if commanders choose not to commit resources to enlist civilian sympathy and support, they must still adjust their operations to minimize damage and loss of life to innocent civilians.

## SECTION II – LEADERSHIP

2-25. To help ease their anxiety in combat, soldiers must have confidence in their leaders. This confidence may diminish rapidly unless leaders demonstrate the ability to lead over formidable terrain and under the most difficult weather conditions. Superficial knowledge of mountain warfare and ignorance or underestimation of mountain hazards and environmental effects may result in mission failure and the unnecessary loss of soldiers' lives.

2-26. Effective leadership in mountain operations combines sound judgment with a thorough understanding of the characteristics of the mountain environment. Commanders must first develop flexible and adaptable leadership throughout the chain of command. They must then be able to understand and exploit the operational and tactical implications of the mountain environment, as well as its effects on personnel, equipment, and weapons. The keys to meeting this challenge are proper training and operational experience in the mountains. To fight effectively, leaders creatively exploit the opportunities offered by the mountain environment while minimizing the adverse effects it can have on their operations.

2-27. Leadership rapidly becomes the primary element of combat power on the mountain battlefield. Commanders must recognize the distinctive effects created by decentralization of command, develop a depth of leadership that forms the vital link to unity of effort, and organize and direct operations that require minimum intervention. While specific situations require different leadership styles and techniques, the nature of mountain warfare generally necessitates that commanders embrace the philosophy of command and control known as *mission command* (see FM 6-0). This type of command and control requires subordinates to make decisions rapidly within the framework of the commander's concept and intent. Commanders must be able to accept some measure of uncertainty, delegate, and trust and encourage subordinate leaders at all levels to use initiative and act alone to achieve the desired results, particularly when the situation changes and they lose contact with higher headquarters.

## **SECTION III – COMMUNICATIONS**

2-28. The communications means available to support operations in mountainous regions are the same as those to support operations in other regions of the world. However, rapid and reliable communications are especially difficult to achieve and maintain in mountainous areas. The mountainous environment requires electronic equipment that is light, rugged, portable and able to exploit the advantages of higher terrain. The combined effects of irregular terrain patterns, magnetic and ionospheric disturbances, cold, ice, and dampness on communications equipment increase operating, maintenance, and supply problems and require precise planning and extensive coordination.

### **COMBAT NET RADIO**

#### **SINGLE-CHANNEL GROUND AND AIRBORNE RADIO SYSTEMS (SINGARS)**

2-29. The Single-channel Ground and Airborne Radio System (SINGARS) family of frequency modulation (FM) radios is good for the control of battalion and smaller-sized units operating in a mountainous environment (see FM 6-02.32 and FM 6-02.18). If available, hands-free radios, such as helmet-mounted radios, are an excellent means of communication for small unit tactics and close-in distances, particularly while negotiating rugged terrain. In colder environments, shortened battery life greatly reduces the reliability of manpacked systems that rely on constant voltage input to maintain maximum accuracy.

2-30. Since even a small unit may be spread over a large area, retransmission sites may be needed to maintain communications and increase range. These sites require extensive preparation and support to ensure the survival of personnel and the continued maintenance of equipment. Retransmission systems are often placed on the highest accessible terrain to afford them the best line-of-sight; however, through simple analysis, these locations are often predictable and make them more vulnerable to enemy interdiction. The importance and difficulty of maintaining adequate communications in mountainous terrain requires commanders to devote additional resources for the protection of these limited assets and operators skilled in the proper use of cover and concealment, noise and light discipline, and other operations security (OPSEC) measures.

2-31. Physical range limitations, difficulties in establishing line-of-sight paths due to intervening terrain, and limited retransmission capabilities often make it difficult to establish a brigade and larger-sized radio net. However, commanders can, if within range, enter subordinate nets and establish a temporary net for various contingencies. In the mountains or if the mobile subscriber equipment network is not yet fully developed, commanders should consider the increased need for the improved high frequency radio (IHFR) family of amplitude modulation (AM) radios and single-channel tactical satellite communications terminals for extended distances.

## SATELLITE COMMUNICATIONS (SATCOM)

2-32. Satellite communications (SATCOM) terminals are light, small, portable ground terminals that are able to communicate in spite of rugged terrain. During operations in mountainous areas having little or no infrastructure to support command and control, satellite

- **Greater freedom from siting restrictions**
- **Extended range, capacity, and coverage**
- **Mobility and rapid employment**
- **Extremely high circuit reliability**

**Figure 2-5. SATCOM Advantages**

communications become the primary means of communications. Single channel SATCOM are currently transmitted over the ultrahigh frequency (UHF) band and readily support forces operating in the mountains, while providing worldwide tactical communications, in-theater communications, combat net radio (CNR) range extension, and linkage between elements of long-range surveillance units (LRSUs) and Army special operations forces (ARSOF). SATCOM can network with multiple users, communicate while enroute, penetrate foliage while on the ground, and has several other advantages making it an ideal system for mountain communications (see Figure 2-5). However, limitations include restricted access, low-rate data communications, and lack of antijam capability. Commanders should review FM 6-02.11 for further information on the employment of SATCOM.

## COMMAND AND CONTROL (C<sup>2</sup>) AIRCRAFT

2-33. Using C<sup>2</sup> aircraft can assist the commander in overcoming ground mobility restrictions and may improve communications that would otherwise limit his ability to direct the battle. In the mountains, terrain masking, while making flight routing more difficult, may provide the degree of protection needed to allow an increased use of aircraft. To avoid radar or visual acquisition and to survive, C<sup>2</sup> aircraft must use the same terrain flight techniques employed by other tactical aviation units. This flight method often degrades FM communications and reinforces the requirement for radio relay or retransmission sites.

## ANTENNAS AND GROUNDS

2-34. Directional antennas, both bidirectional and unidirectional, may be needed to increase range and maintain radio communications. Although easy to fabricate, directional antennas are less flexible and more time-consuming to set up. Positioning of all antennas is also crucial in the mountains because moving an antenna even a small distance can significantly affect reception.

2-35. Antenna icing, a common occurrence at high elevations, significantly degrades communications. Ice may also make it difficult to extend or lower antennas, and the weight of ice buildup, combined with increased brittleness, may cause them to break. Antennas should have extra guy wires, supports, and anchor stakes to strengthen them to withstand heavy ice and wind loading. All large horizontal antennas should be equipped with a system of counterweights arranged to slacken before wire or poles break from the excess pressures of ice or wind. Soldiers may be able to remove wet snow and sleet that freezes to antennas by jarring their supports, or by attaching a hose to

the exhaust pipe of a vehicle and directing the hot air on the ice until it melts. However, soldiers must exercise great care to ensure that the antenna is not damaged in their attempts to dislodge the ice.

2-36. Ground rods and guy wires are often difficult to drive into rocky and frozen earth. Mountain pitons are excellent anchors for antenna guys in this type of soil. In extreme cold, ropes can be frozen to the ground and guys tied to these anchor ropes. Adequate grounding is also difficult to obtain on frozen or rocky surfaces due to high electrical resistance. Where it is possible to install a grounding rod, it should be driven into the earth as deep as possible or through the ice on frozen lakes or rivers. Grounding in rocky soil may be improved by adding salt solutions to improve electrical flow.

## **MOBILE SUBSCRIBER EQUIPMENT**

2-37. Like FM, mobile subscriber equipment (MSE) requires a line-of-sight transmission path and a tactical satellite or several relay sites to overcome mountainous terrain and maintain MSE connectivity (FM 6-02.55 contains in-depth information concerning the deployment and employment of MSE).

## **WIRE AND FIELD PHONES**

2-38. Wire is normally one of the most reliable means of communication. Unfortunately, in rugged mountains and particularly during the winter months, wire is more difficult and time consuming to install, maintain, and protect. Wire may be dispensed in mountain areas by tracked or wheeled vehicle, foot, skis, snowshoes, or oversnow vehicles. As in any environment, units must periodically patrol their wire lines to ensure that they have remained camouflaged and that the enemy has not tapped into them.

2-39. Snow-covered cables and wire can cause the loss of many man-days in recovering or maintaining circuits. This can be avoided by pulling the cable from under the snow after each snowfall and letting it rest just below the surface of the snow. Trees or poles can be used to support wire. Allowances must be made for drifting snow when determining the height above ground at which to support the lines. However, when crossing roads, it is preferable to run the wire through culverts and under bridges rather than bury or raise wire overhead. In addition to ease, this technique reduces maintenance requirements associated with vehicles severing lines, particularly with higher volumes of traffic on limited road networks. If long-distance wire communications are required, the integration of radio relay systems must be considered.

2-40. Great care must be taken in handling wire and cables in extreme cold weather. Condensation and ice on connectors make connecting cables difficult and can degrade the signal path. When rubber jackets become hard, the cables must be protected from stretching and bending to prevent short circuits caused by breaks in the covering. Therefore, all tactical cable and wire should be stored in heated areas or warmed prior to installation. TC 24-20 provides more detailed information on the installation and maintenance of wire and cable.

2-41. Field phones are useful in a stationary position, such as a mountain patrol base or an ambush site, although leaders must consider the weight and

difficulties encountered in laying and maintaining wire in these sites of limited duration. The batteries that are used to operate field telephones and switchboards are subject to the same temperature limitations as those used to power tactical radio sets.

2-42. When used with a hands-free phone, commercially available rope with a communication wire in it is ideally suited for mountain operations. This system is lightweight and easy to manage, and provides an added measure of security during limited visibility operations. In addition to the standard uses, since it functions as both a rope and a wire, it can be used to control movement on all types of installations, and it can serve as a primary means of communication for climbing teams.

## **AUDIO, VISUAL, AND PHYSICAL SIGNALS**

2-43. Leaders can use simple audio signals, such as voice or whistles, to locally alert and warn. Sound travels farther in mountain air. Although this effect may increase the possibility of enemy detection, interrupting terrain, wind conditions, and echoes can restrict voice and whistle commands to certain directions and uses.

2-44. Like audio signals, visual signals such as pyrotechnics and mirrors have limited use due to enemy detection, but may work for routine and emergency traffic at the right time and place. Blowing sand or snow, haze, fog, and other atmospheric conditions may periodically affect range and reliability.

2-45. Units should use hand and arm signals instead of the radio or voice whenever possible, especially when close to the enemy. Luminous tape on the camouflage band, luminous marks on a compass, or flashlights may be used as signals at night over short distances. Infrared sources and receiving equipment, such as night vision goggles, aiming lights, and infrared filters for flashlights, can be used to send and receive signals at night. However, an enemy outfitted with similar equipment can also detect active devices.

2-46. A tug system is a common method of signaling between members of a roped climbing team. However, tug systems are often unreliable when climbers are moving on a rope or when the distance is so great that the friction of the rope on the rock absorbs the signals. Separate tug lines can be installed in static positions by tying a string, cord, or wire from one position to the next. Soldiers can pass signals quietly and quickly between positions by pulling on the tug line in a prearranged code.

## **MESSENGER**

2-47. Although slow, communication by messenger is frequently the only means available to units operating in the mountains. Messengers should be trained climbers, resourceful, familiar with mountain peculiarities, and able to carry their own existence load. During the winter, advanced skiing skills may also be required. Messengers should always be dispatched in pairs. Air messenger service should be scheduled between units and integrated with the aerial resupply missions. Vehicles may also be employed to maintain messenger communications when conditions of time, terrain, and distance permit.

## SECTION IV – TRAINING

2-48. Because US forces do not routinely train in a mountain environment, they must make extensive preparations to ensure individual and unit effectiveness. Ultimate success in the mountains depends largely on developing cohesive, combat-ready teams consisting of well-trained soldiers. To be successful, commanders must understand the stratification of mountain warfare, recognize the unique aspects of leadership required, and implement training programs that prepare soldiers for the rigors of mountain fighting.

2-49. In the mountains, commanders face the challenge of maintaining their units' combat effectiveness and efficiency. To meet this challenge, commanders conduct training that provides soldiers with the mountaineering skills necessary to apply combat power in a rugged mountain environment, and they develop leaders capable of applying doctrine to the distinct characteristics of mountain warfare.

- **Mountaineering skills**
- **Air assault and air movement operations**
- **Deception**
- **Stealth and infiltration**
- **Limited visibility operations**
- **Patrolling**
- **Reconnaissance**
- **Communications**
- **CS and CSS operations**

**Figure 2-6. Training Areas of Emphasis**

2-50. The ability to apply doctrine and tactics in mountainous environments is not as easy to develop as technical proficiency. Training, study, and garrison experimentation may provide the basis for competence. However, only through experience gained by practical application in the mountains will leaders become skilled in mountain warfare. Proficiency in the areas listed in Figure 2-6 will provide commanders with a degree of flexibility in the application of doctrine to a mountain area of operations.

2-51. The best combat and combat support plans cannot ensure victory unless commanders concentrate on developing a leadership climate that is derived from the human dimension of mountain warfare. The complexities of mountain combat make it extremely important to establish training programs that modify the traditional application of tactics so that units can reach their full potential. Training must simulate the tempo, scope, and uncertainty of mountain combat to create the versatility required to capitalize on the harsh environment as a force multiplier.

2-52. Competent units operate effectively in mountains and focus on the battle. Unprepared units, however, may become distracted by the environment and end up expending as much effort fighting the environment as they do fighting the enemy. Soldiers cannot be fully effective unless they have the proper clothing and equipment, and are trained to protect themselves against the effects of terrain and frequent and sudden changes in weather.

## **INITIAL TRAINING ASSESSMENT**

2-53. In addition to the questions applicable to every mission, commanders must consider the following when preparing for operations in a mountainous environment:

- What kind of mountains will the unit be operating in?
  - What elevations will the unit be operating at?
  - What are the climatic and terrain conditions of the AO?
  - Are at least two years of accurate weather reports available (see Appendix B)?
- When must the unit be ready to move?
- What training resources are needed and available?
- Are local training areas and ranges available?
  - If not, what alternative arrangements can be made?
  - What available training areas most closely resemble the AO?
- What special equipment does the unit require?
- What training assistance is available?
  - Does the unit have former mountain warfare instructors, military mountaineers, or others with experience in a mountainous environment?
  - Are instructors available from outside the unit?
- What special maintenance is required for weapons and equipment?
- What is the level of physical fitness?
- What additional combat, combat support, and combat service support units are necessary to accomplish the operational missions?
  - Can specific units be identified for possible coordinated training?
- Will allied and multinational troops participate?

2-54. As commanders get answers to these and other questions, they must develop training programs to bring their units to a level where they will be fully capable of operating successfully in mountainous conditions. To do this, they must establish priorities for training. The training requirements listed in Figure 2-7 are only a guide. Commanders should add, delete, and modify the tasks as necessary, depending on the specific AO, the state of readiness of their units when they begin preparations for mountain operations, and the time and facilities available (see FM 7-10).

## **PHYSICAL CONDITIONING**

2-55. Soldiers who have lived and trained mostly at lower elevations tend to develop a sense of insecurity and fear about higher elevations – many are simply afraid of heights in general. With this in mind, leaders must plan training that accustoms soldiers to the effects of the mountain environment. Physical conditioning must be strictly enforced, since “new muscle” strain associated with balance and prolonged ascents/descents quickly exhausts even the most physically fit soldiers. Even breathing becomes strenuous, given the



TRAINING REQUIREMENTS	ALL	STAFF AND LEADERS	TEAMS AND CREW MEMEBERS	SPECIALISTS
Physical Conditioning and Acclimatization	✓	✓	✓	✓
Mountain Illnesses and Injuries	✓	✓	✓	✓
Mountain Living and Survival	✓	✓	✓	✓
Mountain Navigation Techniques	✓	✓	✓	✓
Mounted and Dismounted March Planning	✓	✓	✓	✓
Communications Techniques	✓	✓	✓	✓
Weapons/Equipment Training	✓	✓	✓	✓
Additional Maintenance Requirements	✓	✓	✓	✓
Camouflage and Concealment	✓	✓	✓	✓
Obstacles		✓	✓	
Above-ground Fortifications	✓	✓	✓	✓
Level 1 Mountaineering	✓	✓	✓	✓
Level 2 and 3 Mountaineering				✓
Driver and Pilot Training				✓
Air Assault/Air Movement Operations	✓	✓	✓	✓
NBC Operations	✓	✓	✓	✓

**Figure 2-7. Mountain Preparatory Training**

thinner atmosphere at higher altitudes. Therefore, training must emphasize exercises designed to strengthen leg muscles and build cardiovascular (aerobic) endurance (see FM 3-25.20). Frequent marches and climbs with normal equipment loads enhance conditioning and familiarize soldiers with mountain walking techniques.

## MOUNTAIN LIVING

2-56. Successful mountain living requires that personnel adjust to special conditions, particularly terrain and weather. To develop confidence, soldiers should train in conditions that closely resemble those they will face. Lengthy exercises test support facilities and expose soldiers to the isolation common to mountain operations. The mountain area of operations can be harsh, and training should develop soldiers who possess the necessary field craft and psychological edge to operate effectively under mountainous conditions. Although FM 4-25.10 and FM 3-25.76 do not specifically address mountain environments, much of their information applies. Regardless of the level of technical mountaineering training required, all soldiers deploying to a mountainous region should be trained in the areas listed in Figure 2-8 on page 2-18.

## NAVIGATION

2-57. Navigation in the mountains is made more difficult because of inaccurate mapping, magnetic attraction that affects compass accuracy, and the irregular pace of the soldiers. It is easy to mistake large terrain features that are very far away for features that are much closer. The increased necessity for limited-visibility operations restricts the use of terrain techniques as the primary means of

- **Temperature extremes and clothing requirements**
- **Bivouac techniques and shelter construction**
- **Elevation and rarified air effects**
- **Hygiene, sanitation, and health hazards**
- **Locating and purifying water**
- **Food-gathering techniques**

**Figure 2-8. Mountain Living Training**

determining and maintaining direction. Individuals must train to use a variety of equipment, such as a compass, an altimeter, global positioning system devices, and maps, as well as learn techniques pertaining to terrestrial navigation, terrain association, dead reckoning, resectioning, and artillery marking (see FM 3-25.26).

## WEAPONS AND EQUIPMENT

2-58. Nearly every weapon or piece of equipment familiar to the soldier is affected to some degree by the mountain environment. In addition to honing skills, training must focus on the specific operational area and ways to overcome anticipated environmental impacts when using weapons and equipment.

2-59. Individual marksmanship training must emphasize the effect of wind and include practical training in wind measurement techniques and adjusted aiming points (holdoff). Practical training in range estimation techniques, combined with using laser range finders, M19 binoculars, target reference points, and range cards, helps to overcome difficulties in range estimation.

2-60. In the conduct of their preparations, commanders should strive to increase the number of qualified snipers within their units, as they are ideal in the mountains and can be used to adversely affect enemy mobility by delivering long range precision rifle fire on selected targets. They can inflict casualties, slow enemy movement, lower morale, and add confusion to enemy operations. A single sniper team in well-concealed positions, such as mountain passes, can severely impede enemy movement (see FM 3-21.20 and FM 3-91.2 for further information on sniper employment).

## CAMOUFLAGE AND CONCEALMENT

2-61. The basic principles of camouflage and concealment also apply in mountain operations (see FM 3-24.3). However, certain elements must be adjusted for snow. With snow on the ground, standard camouflage nets and paint patterns are unsuitable. In areas where snow cover is above 15 percent of the background, winter camouflage nets should take the place of standard nets and temporary white paint should be used over the green portions of vehicles. In terrain with more than 85 percent snow cover, the vehicles and

equipment should be solid white. However, with less than 15 percent snow cover, standard patterns should be maintained.

2-62. Snow provides excellent conditions for threat thermal and ultraviolet sensor detection. To counter these types of sensors, soldiers must be trained to utilize the terrain to mask themselves and their weapons and equipment from enemy detection. The mountainous terrain often limits the access routes to and from selected positions. Commanders must take appropriate measures to conceal vehicle tracks and limit movement times to periods of limited visibility. Snow presents a significant problem, making movement discipline an absolute requirement. When moving, leaders should be trained to follow the shadows along windswept drift lines as much as possible. Drivers should learn to avoid sharp turns, which are easily recognizable in the snow, and follow existing track marks where possible.

## **FORTIFICATIONS**

2-63. Fighting and protective positions in the mountains do not differ significantly from other environments, except in areas of snow and rock (see FM 3-34.112 for more information on common survivability positions and FM 3-97.11 for positions created in snow). Digging positions in rocky ground is difficult and often impossible. If demolitions, pneumatic drills, and jackhammers are available, positions may be blasted or drilled in the rock to afford some degree of protection. More often, it will be necessary to build above-ground positions by stacking boulders, stones, and gabions. If possible, existing rock formations should be used as structural wall components.

2-64. If above-ground positions are to be used, considerable care should be taken to avoid siting them in view of any likely enemy avenues of approach. Even a two-man position is difficult to conceal if it is above the timberline. Camouflage nets and the use of background rocks are necessary to break up the outline of the position and hide straight edges.

2-65. Positions should be built of the largest rocks available, wedged securely together. Extreme care should be taken that the walls are stable and not leaning or sloping downhill. An unstable wall is more of a liability than an asset, as the first impact may cause it to collapse onto the defenders. Rocks and gabions should be stacked to systematically overlap each joint or seam to help ensure stable construction. Larger rocks or stones can be used to help bond layers of rock beneath. If possible, a layer of sandbags should be placed on the top of and around the inside of the wall. Substantial overhead cover is normally required in rocky areas. The effects of artillery bursts within and above a protective position are greatly enhanced by rock and gravel displacement or avalanche. Figure 2-9 on page 2-20 shows simple examples of the right and wrong way to build these positions.

## **MILITARY MOUNTAINEERING**

2-66. The skills required for movement are often difficult to learn and usually very perishable. Commanders must understand the application and mechanics of technical mountaineering systems needed for mobility and movement of soldiers and equipment. In the mountains, a unit may be ineffective unless it has the prerequisite technical training. However, some mountains may

feature terrain that is relatively benign, requiring minimal specialized techniques. Other areas will mandate the need for more advanced mountaineering skills. One key to quickly determining the type and extent of training required is to analyze and classify the level of individual movement required according to the dismounted mobility classification table introduced in Chapter 1. Once commanders have determined the specific level and tasks required, TC 90-6-1 will provide them with detailed information on specific mountaineering techniques and equipment (described below).

2-67. Military mountaineering training provides tactical mobility in mountainous terrain that would otherwise be inaccessible. Soldiers with specialized training who are skilled in using mountain climbing equipment and techniques can overcome the difficulties of obstructing terrain. Highly motivated soldiers who are in superior physical condition should be selected for more advanced military mountaineering training (Levels 2 and 3) conducted at appropriate facilities. Soldiers who have completed advanced mountaineering training should be used as trainers, guides, and lead climbers during collective training. They may also serve as supervisors of installation teams (see Chapter 4) and evacuation teams (see Chapter 5). Properly used, these soldiers can drastically improve mobility and have a positive impact disproportionate to their numbers. Units anticipating mountain operations should strive to achieve approximately ten percent of their force with advanced mountaineering skills.

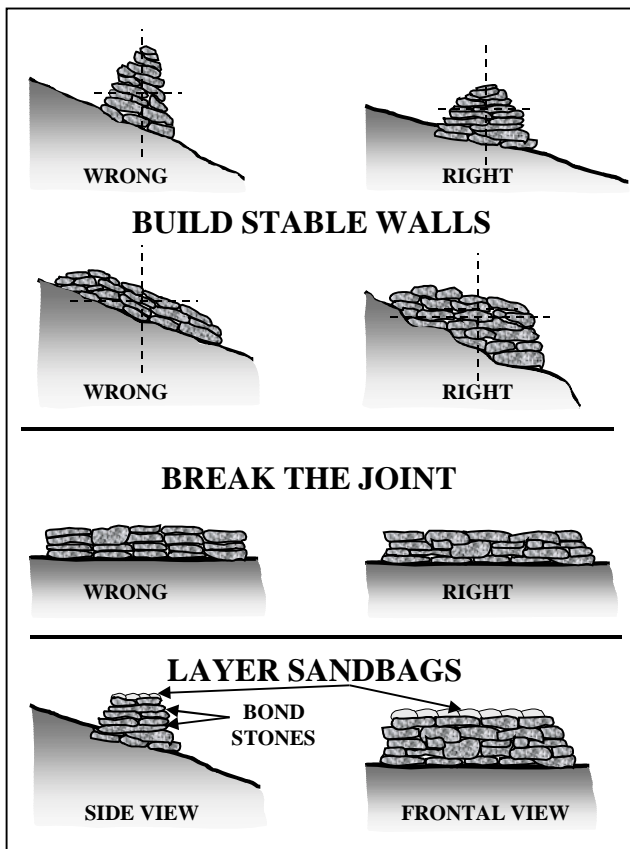


Figure 2-9. Fortifications in Rocky Soil

## LEVEL 1: BASIC MOUNTAINEER

2-68. The basic mountaineer, a graduate of a basic mountaineering course, should be trained in the fundamental travel and climbing skills necessary to move safely and efficiently in mountainous terrain. These soldiers should be comfortable functioning in this environment and, under the supervision of qualified mountain leaders or assault climbers, 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. These soldiers may provide limited assistance to soldiers unskilled in mountaineering techniques. Particularly adept soldiers may be selected as members of special purpose teams led and supervised by advanced mountaineers. Figure 2-10 lists the minimum knowledge and skills required of basic mountaineers.

<ul style="list-style-type: none"> <li>• <b>Characteristics of the mountain environment (summer and winter)</b></li> <li>• <b>Mountaineering safety</b></li> <li>• <b>Use, care, and packing of individual cold weather clothing and equipment</b></li> <li>• <b>Care and use of basic mountaineering equipment</b></li> <li>• <b>Mountain bivouac techniques</b></li> <li>• <b>Mountain communications</b></li> <li>• <b>Mountain travel and walking techniques</b></li> <li>• <b>Hazard recognition and route selection</b></li> <li>• <b>Mountain navigation</b></li> <li>• <b>Basic medical evacuation</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Rope management and knots</b></li> <li>• <b>Natural anchors</b></li> <li>• <b>Familiarization with artificial anchors</b></li> <li>• <b>Belay and rappel techniques</b></li> <li>• <b>Use of fixed ropes (lines)</b></li> <li>• <b>Rock climbing fundamentals</b></li> <li>• <b>Rope bridges and lowering systems</b></li> <li>• <b>Individual movement on snow and ice</b></li> <li>• <b>Mountain stream crossings (to include water survival techniques)</b></li> <li>• <b>First aid for mountain illnesses and injuries</b></li> </ul>
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**Figure 2-10. Level 1: Basic Mountaineer Tasks**

2-69. In a unit training program, level 1 qualified soldiers should be identified and prepared to serve as assistant instructors to train unqualified soldiers in basic mountaineering skills. All high-risk training, however, must be conducted under the supervision of qualified level 2 or 3 personnel.

## **LEVEL 2: ASSAULT CLIMBER**

2-70. Assault climbers are responsible for the rigging, inspection, use, and operation of all basic rope systems. They are trained in additional rope management skills, knot tying, belay and rappel techniques, as well as using specialized mountaineering equipment. Assault climbers are capable of rigging complex, multipoint anchors and high-angle raising/lowering systems. Level 2 qualification is required to supervise all high-risk training associated with Level 1. At a minimum, assault climbers should possess the additional knowledge and skills shown in Figure 2-11 on page 2-22.

## **LEVEL 3: MOUNTAIN LEADER**

2-71. Mountain leaders possess all the skills of the assault climber and have extensive practical experience in a variety of mountain environments in both winter and summer conditions. Level 3 mountaineers should have well-developed hazard evaluation and safe route finding skills over all types of mountainous terrain. Mountain leaders are best qualified to advise commanders on all aspects of mountain operations, particularly the preparation and leadership required to move units over technically difficult, hazardous, or

<ul style="list-style-type: none"> <li>• <b>Use specialized mountaineering equipment</b></li> <li>• <b>Perform multipitch climbing:</b> <ul style="list-style-type: none"> <li>- Free climbing and aid climbing</li> <li>- Leading on class 4 and 5 terrain</li> </ul> </li> <li>• <b>Conduct multipitch rappelling</b></li> <li>• <b>Establish and operate hauling systems</b></li> <li>• <b>Establish fixed ropes with intermediate anchors</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Movement on moderate angle snow and ice</b></li> <li>• <b>Establish evacuation systems and perform high angle rescue</b></li> <li>• <b>Perform avalanche hazard evaluation and rescue techniques</b></li> <li>• <b>Familiarization with movement on glaciers</b></li> </ul>
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**Figure 2-11. Level 2: Assault Climber Tasks**

exposed terrain. The mountain leader is the highest level of qualification and is the principle trainer for conducting mountain operations. Instructor experience at a military mountaineering training center or as a member of a special operations forces (SOF) mountain team is critical to acquiring Level 3 qualification. Figure 2-12 outlines the additional knowledge and skills expected of mountain leaders. Depending on the specific AO, mountain leaders may need additional skills such as snowshoeing and all-terrain skiing.

**Figure 2-12. Level 3: Mountain Leader Tasks**

## **DRIVER TRAINING**

2-72. Driving in mountains is extremely difficult. To be successful, drivers must know their equipment's limitations and capabilities. Training should center on practical exercises in mountainous terrain that gradually introduce drivers to more complex terrain and weather conditions. The exact nature of the mountainous terrain determines the training (see Figure 2-13).

<ul style="list-style-type: none"> <li>• <b>Identification and recognition of potential dangers</b></li> <li>• <b>Movement along steep grades combined with:</b> <ul style="list-style-type: none"> <li>- Narrow roads and sharp curves</li> <li>- Loose rock and gravel</li> <li>- Ice and snow (to include using tire chains for wheeled vehicles)</li> <li>- Towed loads</li> </ul> </li> <li>• <b>Increased cold weather maintenance requirements</b></li> </ul>
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**Figure 2-13. Driver Training**

## **ARMY AVIATION**

2-73. The mountainous environment, particularly its severe and rapidly changing weather, affects aircraft performance capabilities, accelerates crew fatigue, and influences basic flight techniques. These techniques can be acquired only through a specific training program for the particular type of mountainous terrain. Additionally, limited visibility operations in the mountains are extremely hazardous and require extensive training for those aviation units involved. Common problems associated with mountain operations become much more complex at night, even when using night vision devices. Few Army aviation units regularly train for mountain operations, so it is critical to alert them as soon as possible to facilitate the required training to ensure safe and successful mission execution.

## **RECONNAISSANCE AND SURVEILLANCE**

2-74. Training in reconnaissance and surveillance should focus on trafficability (route, mobility, and bridge classification), potential drop zones or landing areas, likely defensive positions, and potential infiltration routes. Infiltration and exfiltration are relatively easy in mountainous terrain and constitute a significant threat to the maneuver elements and their support units.

## **TEAM DEVELOPMENT**

2-75. The decentralized nature of mountain combat and the need for the exercise of a mission command philosophy of command and control involve assigning missions to independently operating small teams that may be isolated from their higher headquarters. The disruptive influences of the environment and sustained physical stress further increase the perception of isolation (see FM 4-02.22). The most important factor that sustains a soldier in combat is the powerful psychological support that he receives from his primary group, such as a buddy team, squad, or platoon. He is less likely to feel the stress of loneliness under the isolated conditions of mountain warfare if his primary group maintains its integrity.

2-76. The soldier's ability to survive and operate in the mountains is the basis for the self-confidence needed to feel accepted by the team. Leaders must develop small-unit cohesion down to the buddy team. Each soldier must have a buddy to share both responsibilities and rewards. The leader must not simply assign two soldiers as a buddy team, but pair soldiers whose skills and attributes complement each other. Each soldier can then learn his buddy's specialized skills adding depth to the unit if one soldier becomes disabled. Soldiers work with their buddies, as well as function as part of the larger squad team. The combined strengths of buddies enhance both unit effectiveness and combat power. FM 6-22 has more information on team development.

