



HANDBOOK

No. 03-35

Dec 03



Tactics, Techniques, and Procedures

Center for Army Lessons Learned (CALL)
U.S. Army Training and Doctrine Command (TRADOC)
Fort Leavenworth, KS 66027-1350

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FOREWORD

The purpose of this handbook is to provide units with current information from Operation ENDURING FREEDOM (OEF). The handbook provides tips, lessons and tactics, techniques, and procedures from several sources, including CJTF 180, the National Ground Intelligence Agency (NGIC), and the Center for Army Lessons Learned (CALL.) CALL recently deployed a Combined Arms Assessment Team (CAAT) to both Afghanistan and Iraq. This handbook is a result of combining information from several sources to provide follow-on units with a current view of operations in OEF.

The handbook also contains enduring lessons on high altitude operations, field sanitation, cold weather operations, soldiers load, security and base camp defense. The importance of the enduring lessons are at times forgotten, but provide the foundation for mission accomplishment in various operational environments.

Understanding the nature of specific environments encountered in ENDURING FREEDOM is essential to stressing the planning capabilities of brigade and battalion staffs and sharpening the critical skills demanded of Army leaders. To succeed in the OEF operational environment, soldiers must be able to protect themselves from various and sometimes unpredictable threats, while exploiting enemies' weaknesses.

A handwritten signature in black ink, reading 'Lawrence H. Saul', is positioned above the printed name.

LAWRENCE H. SAUL

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Director, Center for Army Lessons Learned

OPERATION ENDURING FREEDOM HANDBOOK II

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The Secretary of the Army has determined that the publication of this periodical is necessary in the transaction of the public business as required by law of the Department. Use of funds for printing this publication has been approved by Commander, U.S. Army Training and Doctrine Command, 1985, IAW AR 25-30.

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CHAPTER 1

Anti-Coalition Members (ACM) Tactics, Techniques, and Procedures

SECTION I: MANEUVER

Combined Joint Task Force 180 (CJTF 180) conducts operations against anti-coalition forces in Afghanistan. Anti-coalition members (ACMs) are drawn from al-Qaida, Taliban, and other factions opposed to the interim government of Afghanistan.

Ambush Tactics, Techniques, And Procedures

During the Soviet-Afghan war, Mujahedin ambushes were the most effective counter to Soviet/Democratic Republic of Afghanistan Army military activity. U.S. forces have encountered similar ambushes by ACM organizations or factions.

- Ambushes are conducted for either harassment or resupply:
 - Harassment ambushes are generally small scale (as few as two to four personnel) and brief, followed by a rapid withdrawal of troops.
 - Ambushes for spoils require more personnel, and destroyed or abandoned vehicles are looted for weapons, munitions, food, and anything else of value.
- A small ambush element consists of 2 to 15 personnel, whereas a large ambush element can include from 100 to 150 personnel.
- Ambush teams include the following elements:
 - Observers (three to four men): Possibly unarmed, pretending to be shepherds, farmers, etc. Children are sometimes used as observers
 - Firing element: The ambush's firepower
 - Alert element: Positioned along the likely direction of the ambushed element's direction of retreat or maneuver to hinder his withdrawal.
 - Reserve element: Reinforces the firing element or covers the ambushing element's withdrawal
- These ambushes have an established chain of command and radio communications. If no radios are available, communication will be accomplished by visual signaling, such as smoke grenades, mirrors, flares, and waving.
- The ambush deployment consists of three lines:
 - First line: The firing element of the ambush
 - Second line: Communications element, located 20 to 25 meters behind the first line in order to relay communications between the command element and the firing element
 - Third line: Command element, located 30 meters behind the second line
- Ambush sites are carefully selected. They are usually set up along the entrance and exit routes through canyons and other narrow passageways. In built-up areas, the ambushes are set up behind earthen walls or in houses or other structures.
- Ambushes usually occur in the early morning or in the evening. Additionally, most convoy ambushes have been reported to occur on return trips, typically because routes

of travel are restricted. Once a force leaves on a mission, enemy forces know that they will be returning soon and usually on the same route.

- ACM forces have also become adept at setting ambushes to intercept reaction forces responding to shelling attacks on bases, compounds, or other fixed installations.

Lessons:

Lesson 1: Advance reconnaissance patrols are necessary, but simply driving through the suspected area does not clear it of enemy forces or prevent an ambush on a trailing convoy. Reconnaissance and security elements have to secure the entry and exit locations of suspected ambush sites in addition to clearing surrounding high ground.

Lesson 2: Helicopter support is crucial in preventing ambushes. A narrow time gap between a reconnaissance flight and the point element of a convoy will prevent or hinder the deployment of the ambushing force from concealed positions. Recent experience has shown that ACM forces will “go to ground” and hide in order to avoid detection and possible engagement by unmanned aerial vehicles (UAVs) and armed aircraft.

Lesson 3: It is important to avoid predictable and set patterns of movement.

Lesson 4: The Mujahedin continued to use similar tactics and the same ambush sites months later when the Soviets failed to inform replacement units of the mistakes that compromised route security and likely ambush sites.

Sniper Operations

U.S. and coalition force experience with ACM snipers has been minimal. There is little evidence of well-trained and qualified snipers. Most engagements seem to feature high volume fires (shoot and spray) as opposed to disciplined, well-aimed fires. Where snipers have been detected, they have been quickly neutralized. Some Afghan fighters have demonstrated an ability to fire accurately. The Zadran tribe is well known for producing excellent marksmen. Al-Qaida sharpshooters have also demonstrated excellent skills, but average ACM fighters appear to lack fire discipline in combat situations.

Raids

Raids, usually conducted at night, are a common Afghan tactic. Raiding groups attempt to gather forces covertly, attack the objective, seize needed supplies, and retreat before the defensive forces can effectively react. ACM forces routinely use cover of darkness to conceal their approach to and departure from the target area. Taliban or al-Qaida fighters will resort to raids or ambushes to resupply themselves with food, ammunition, and equipment. Non-government facilities are frequent targets since they have a minimal guard force and provide sources of vehicles, food, and other items of importance such as batteries and radios. ACM forces will frequently bring their own cargo transportation, but will also attempt to steal vehicles at target sites.

Individual And Small-Team Tactics

Individuals or small teams that contain as few as three or four fighters can infiltrate the area near an installation and use RPGs or sniper weapons to engage personnel or equipment. Harassment attacks are conducted by teams that fire at the installation from a distance and rapidly leave the area once they have fired their munitions. It is most likely that while firing teams depart the area, another team or individuals are in place to assess damage to the target (if any) and to assess the

response from any reaction force to the attack. After patterns are established, i.e., strength, timing, and procedures, follow-on attacks with remote improvised explosive devices or ambushes may be attempted.

Shelling Attacks

A number of attacks on cities have taken place in recent times with 107-mm rockets, impacting seemingly at random, causing civilian casualties. As ACM combatants establish an organized resistance, it is likely these tactics will be featured more prominently. The primary objective of a shelling attack is to show the government's inability to ensure the safety of its citizens and demonstrate the power of ACM forces and, secondarily, harass the enemy and destroy war materiel.

ACM Tactics

- Mujahedin gunners construct multiple firing sites, then fire and quickly displace before enemy artillery, aviation, or ground response forces can effectively respond.
- When possible, Mujahedin will keep water near their firing sites to dampen the ground behind rockets or recoilless rifles. This will limit dust raised by the back blast, reducing the firing signature and making detection of firing positions more difficult.
- Current experience has been with individual rockets crudely aimed, but as experience is gained and aiming devices are improved, firing accuracy will improve.
- Rockets set up to fire with delays ranging from minutes to hours is also commonplace, as it allows a firing party to depart its firing location before the rockets fire. Timed firing devices range from crude mechanical devices to more sophisticated timers such as electronic watches or circuit boards that can initiate a firing sequence of several individual rockets.
- Mortars and multiple rocket launchers were the favored weapons to bombard airfields during the Soviet occupation. Attackers can establish concealed mortar positions, rapidly fire several rounds into the airfield, and then rapidly leave the area.
- Rockets can be fired using improvised launchers and time-delay firing devices. This is especially true for 107-mm rockets. Regular military rocket launching systems may also be employed, providing greater range and accuracy.
- The raid is likely to be a hit-and-run affair; therefore, withdrawal and survivability are important factors.
- To deter ground pursuit, the attackers may mine routes ahead of time, evade through the safe lanes in existing minefields, or scatter mines as they leave. If favorable terrain and weather exist, the attackers may establish an ambush site from which to attack pursuers.
- Fleeing attackers will also attempt to blend into local populations, dropping or hiding their weapons along the way and attempting to fit into a local village or group.

Cave And Mountain Defense And Ambush Techniques And Procedures

Afghanistan's caves and irrigation tunnels have served as protection and defense from foreign invaders since the time of Genghis Khan. Coalition forces should recruit reliable anti-Taliban Afghan scouts to assist in locating caves, defensive positions, and likely ambush sites in the passes and trails.

Prepared defenses:

Caves, trenches, and spider holes are incorporated into prepared mountain defensive positions, and the Taliban will attempt to draw U.S./coalition forces into an attack on them. They may be networked and interconnected particularly in large cave complexes, allowing the Taliban forces to move unseen or withdraw from the immediate area.

Ambushes:

Mountainous terrain is particularly suited to ambushes. Narrow passes and valleys are often the only means to travel between locations without using long, circuitous routes. ACM forces are well aware of this fact and have ambushed coalition forces when they returned on the same routes. This is not new; the vast majority of ambushes against Soviet forces in Afghanistan were executed as they returned using the same route. (**Note:** See also the earlier section on general ambush TTPs.) Superior air surveillance and reconnaissance available to coalition forces will reduce the enemy's capability to successfully conduct large ambushes, but the threat of smaller ambushes and snipers will be constant, especially when support aircraft are not seen or heard by ACM forces.

Lessons:

Lesson 1: At night, noise and light discipline of ACM forces is generally very good, both in defensive positions and for movements. Recon by fire is often used to determine location of key weapons systems of coalition forces.

Lesson 2: ACM forces use a "cave shuttle" system to move fighters and supplies to battle positions, moving in or out of caves or from cave to cave to pick up ammunition and weapons in order to sustain the fight. Caves also provide cover from aerial observation and attack and shelter for wounded fighters.

Urban Ambush And Bomb Training

Urban areas, from small villages to large cities, provide Taliban/al-Qaida and insurgent forces excellent opportunities to conduct both combat and non-combat activities. They will use the multitude of people and buildings to conceal their activities in order to create fear and distrust of U.S. and coalition forces. Individual homes, businesses, religious centers, and even some government facilities may be used as cover for these operations.

One technique used in car-bombings involves the detonation of two IEDs several minutes apart. A small bomb is exploded with the intention of drawing security forces and an increased crowd of on-lookers to the site. At this point a second, larger IED is detonated (either by time delay or remote control) in order to inflict a greater number of casualties. Coalition forces must expect a second follow-on explosion to any IED attack.

Hostile House-Clearing And Hostage-Taking

When taking a group of hostages, the Taliban/al-Qaida team will consist of 6 to 10 terrorists armed with AK-47s and AKMs; at least one terrorist will carry a hand grenade. The terrorists will move from room to room, shooting guards and gathering hostages, finally consolidating the hostages in a single location.

An abduction is carried out using a traditional kidnaping technique. A vehicle will pull in front

of the targeted individual and stop. A second or third vehicle will box in the victim's vehicle. The kidnappers will exit the vehicle, kill guards/driver, subdue the victim, place him in the escape vehicle, and exit the scene.

Recoilless Rifles

ACM tactics for recoilless rifles/guns will be similar to those employed by Taliban/al-Qaida rocket-propelled grenade (RPG) gunners.

Ammunition for various calibers of recoilless rifles has been found in caches throughout the country, specifically large amounts of B10 rocket ammunition. The following systems have been encountered in Afghanistan.

- 90-mm recoilless rifle. (**Note:** Not much information is available regarding ACM tactics for use of the 90-mm recoilless. Information contained here is based on the M67 recoilless rifle.) The 90-mm recoilless rifle weighs approximately 36 lbs, has a maximum effective range of approximately 450 meters, and a maximum range of approximately 2100 meters.
- B-10 82-mm recoilless rifle. The B-10 has a maximum (self-destruction of the round) range of 400 meters for high-explosive antitank rounds and 4500 meters for high-explosive rounds. It weighs approximately 109 lbs. The B-10 has been called the Taliban's "favorite infantry heavy weapon," and although large amounts of ammunition have been recovered, it has not been seen in engagements with U.S. and coalition forces.
- SPG-9 73-mm recoilless rifle. The SPG-9 has a maximum effective range of 800 meters and a maximum (self-destruction of the round) range of 4500 meters. The firing tube weighs 99 lbs (often fired on the shoulder), the trailer weighs 35 lbs, and the tripod weighs 27 lbs. Ammunition for the SPG-9 is nearly identical to the BMP-1, which has a maximum effective range of 1300 meters when mounted on the BMP-1; and an improved round with a maximum range of 6500 meters is available.

Rocket-Propelled Grenade (RPG)

Even though RPGs are classified as an antiarmor weapon, ACM forces will use RPGs against slow-moving aircraft, especially helicopters. RPGs are not very accurate against aircraft, so the enemy will use a high volume of fire. Single RPG attempts against aircraft are rare, but possible. RPGs have achieved some success in downing coalition aircraft.

RPGs display a back blast and flash signature at launch. Most RPGs have a rocket motor that ignites approximately 20 meters after the round has been fired. This rocket motor ignition leaves a visible gray "puff" of smoke. A person looking in the general direction of the launch should notice these indicators. Night-vision devices, including thermal imagers, may help see the RPG launch and rocket while in flight. Unlike man portable, shoulder-launched surface-to-air missiles, RPGs do not corkscrew in flight but have a relatively straight flight path with very little smoke.

Tactics:

- RPG gunners have been observed wetting down the ground behind firing positions to reduce back blast signature.
- ACM RPG gunners will sometimes track flight patterns and use the information as a basis for planning their attacks.

- ACM RPG gunners will position themselves to take advantage of higher elevations in mountainous terrain. This enables gunners to engage their target from above, the side, or the rear to take advantage of blind spots. This technique is also applicable in urban terrain, where RPG gunners can fire from rooftops or high-level windows.
- Some RPG gunners have taken advantage of the rocket's self-destruct feature. To do this, gunners "lob" rounds to the maximum range (approximately 900 meters) to achieve an air burst to engage aircraft in flight or to engage unprotected troops on the ground.
- RPG teams normally consist of two personnel. The gunner carries the RPG and two to four additional rounds. The assistant helps reload after firing, provides limited security with an AK type rifle, and also carries two to four additional rounds. Larger groups may contain two or more RPG teams, with additional rounds carried by other fighters within the group.

Countermeasures:

Understanding tactics employed by RPG gunners and capabilities of the weapon will enhance the value of countermeasures used. Countermeasures can be grouped into two categories: physical and tactical.

- Physical countermeasures include actions taken to reduce or negate the damage of an RPG (or other antitank-type round) once it has been fired. Measures, such as chain link fences, berms, sandbagging, and building reinforced bunkers and other facilities, can be used in fire base, around vehicles and aircraft parked on the ground, as well as prepared firing positions. Trees and other natural shrubbery can also provide some degree of physical protection, but may also reduce fields of observation and fire.
- Tactical countermeasures are actions taken to reduce the ability of RPG gunners to fire or to lessen the value of a target. Suppressive fires on known or suspected firing positions are perhaps the most effective technique. Direct or indirect fires and/or small or large caliber systems can provide these fires; particularly effective is aerial fire support. Speed of movement is also helpful, as is varying speed of movement in order to avoid setting identifiable patterns of movement.

Threat to Coalition Patrols

Common threats to combat patrols include IED, sniper, area and close ambush (far and near), civil disturbances, mines, breakdowns, HUMINT against U.S. forces, and rocket or indirect fire. In the OEF environment identification of enemy forces is difficult. Some of the enemies' TTPs include:

- Attempts to cause a casualty to force a MEDEVAC mission. All likely helicopter landing zones (HLZ) are then mined, rigged with IEDs, or over watched by direct fire weapons that will down the aircraft and cause a symbolic victory as well as a mass casualty situation.
- The enemy uses the mountainous desert terrain to establish an area ambush kill zone that is similar to a baited box engagement. The enemy engages a unit from one direction with a small (2 - 5 man) element at long range. Once coalition forces deploy against the contact, the enemy will engage friendly forces from a second or third direction to cause disruption and greater casualties.
- Enemy uses observed/command detonated IEDs and solar cells to defeat U.S. counter measures like the ACORN. The solar cell is covered with dust that becomes exposed

by vehicles passing by, completing the circuit after the U.S. counter measure has passed.

Lessons:

Lesson 1: Use direct fire and mortars to quickly fix the enemy. Use close air support (CAS), artillery, and/or attack aviation to finish the enemy.

Lesson 2: Once contact has been initiated, likely HLZ identified during planning should be cleared or disregarded in favor of another (farther away) HLZ.

SECTION II: FIRE SUPPORT

Mortars

When U.S./coalition forces make initial contact with ACM prepared defensive positions, the enemy typically responds with immediate mortar fire, their primary fire support weapon.

When U.S. close air support approaches, ACM fighters seek nearby cover, frequently leaving mortars set up, and remain under cover until the air support leaves. Then the fighters will return to their fighting positions, if possible.

Control of high elevations is key to ACM defensive operations. Higher elevation provides greater fields of observation, although poor weather conditions may reduce visibility.

The 82-mm mortar is the primary indirect-fire weapon used by ACM fighters. The 120-mm mortar has been used, but it is not the preferred system. Likewise, 60-mm mortars have been found in cache sites but have not yet been employed against U.S. and coalition forces. Ammunition for both 120- and 60-mm mortars is readily available in country. ACM forces use 82-mm mortars in two different methods of firing:

- Indirect fire: ACM fighters will fire from the reverse slope of the terrain when possible. This requires a forward observer.
- Direct observation: ACM forces refer to this method as “disturbance firing.” This method will be used when the mortar is within the line of sight of the target. It does not require a forward observer since the mortar crew can adjust fire visually.

ACM forces have been observed displacing, carrying only the tube and bipod and leaving the base plate in position for future use. Base plates have been found cemented in place, allowing the mortar crew to quickly occupy and set up new firing positions, achieving high accuracy with first shots. Mortars have been observed set up in the open as crews went to nearby caves to resupply ammunition; the same practice has been noted when coalition aircraft were in the area. Ammunition for the 82-mm mortar is readily available in Afghanistan. There are numerous caches in the country, many of which contain 82-mm mortar ammunition. Mortar ammunition can remain serviceable long after the expiration of its expected shelf life.

Rockets

ACM forces do not have organized rocket units, but they do use 107- and 122-mm rockets. Key points are as follows:

- Rocket firing locations may be placed on high ground overlooking the target.
- Rockets are typically fired using crude, expedient launching methods.

- ACM forces consider harassment of enemy forces as valuable as accurate fire. The use of single-launch tubes and time-delayed firing devices targeted against installations is intended to disrupt operations with incidental damage to buildings; enemy casualties are a fortunate coincidence.
- Cities and military bases (especially airfields) are prime targets for rocket-fire and rocket-harassment missions.

107-mm rocket:

- The 107-mm rocket is available in truck-mounted, towed, and portable variations. It is easy to transport by vehicle, man-pack, or pack animal and has a maximum effective range of approximately 8400 meters. The weapon needs only a small area of level ground for firing.
- The 107-mm rocket ammunition is readily available from a number of countries. High-explosive fragmentation rounds are the only ammunition used.
- The launcher uses simple mortar sights for target acquisition. Direct observation does not require the use of sights and eliminates the need for a fire-direction center. However, this method exposes the crew to detection and counter battery fire since it may require multiple rocket firings to adjust onto the target. Time delay may be used to reduce risk to crews from counter battery fires.
- ACM crews will fire from the reverse slope of a hill or mountain when possible, as this gives the weapon crew additional protection from counterfire.
- A vehicle-mounted 107-mm rocket does not have to be dismounted from the vehicle in order to fire and can be set up and fired from the vehicle in approximately 1 minute. If towed, the set up and fire time increases to approximately 1.5 minutes.
- Standard towed launchers fire 12 rockets; however, small, man-portable, single-tube launchers are also used.
- ACM fighters have become adept at rigging launchers to fire using nothing more than piled rocks or crossed sticks to provide elevation. Although not always accurate, this launch method can be used to conduct effective harassing fires against targets such as airfields, fuel and ammunition depots, and garrisons or fortified areas. Rockets fired in this method can be armed with simple time-delay firing mechanisms, allowing the crew to set up the rocket for a delayed launch after they leave the area.

122-mm rocket:

The 122-mm rocket comes in two versions: a long rocket, fired by the BM-21 truck-mounted launcher with four rows of 10 launch tubes with a range of approximately 20,380 meters; and a short rocket, fired by smaller, portable systems. The man-portable version of the 122-mm rocket launcher fires a short-range rocket with a range of approximately 14,000 meters. Variations of the man-portable launchers include: the single, double, and the 12 tube. Man-portable launchers for the 122-mm rocket are ideal for use in unconventional warfare where fire direction is simple. Each of these launchers needs three to four men for transport and can be used in more restrictive firing positions than the truck-mounted version. Expedient aiming methods and platforms may be used to fire rockets from the tubes. When fired at higher altitudes, the range of the weapon increases although its accuracy decreases.

Artillery

The ACM forces will employ their artillery, if available, in an unconventional manner. Target acquisition will be mostly visual, with manual fire direction and without the use of computers. Since the fall of the Taliban, artillery resources have come under the control of local warlords and have not been employed against coalition forces.

122-mm D-30 Howitzer (M-1963):

Of the numerous weapon systems the Taliban had available prior to the initial air strikes in 2001, the D-30 howitzer was the most plentiful and considered the most dangerous artillery system in their inventory. There have been no recent indications that ACM forces are using the D-30 or any other artillery pieces in Afghanistan. The D-30 is a towed, close-support howitzer. It has a conventional range of 15,300 meters and a range of 1000 meters when used in the direct-fire mode. Emplacement time is approximately 1.5 minutes, and displacement takes approximately 3 minutes. ACM forces will place the weapon under trees, in heavy brush, or in cave entrances to avoid detection. Ammunition for the D-30 is available in numerous caches spread throughout Afghanistan.

SECTION III: AIR DEFENSE

The three primary portions to the air defense threat in Afghanistan are the Man-Portable Air Defense Systems (MANPADS) (shoulder-fired surface-to-air missiles), small-arms and rocket-propelled grenades (RPGs), and light anti-aircraft weapons (generally 12.7 through 23 mm). Old military or available commercial night vision equipment may be possessed by ACM forces and may be employed with air defense weapons.

Man-Portable Air Defense Systems (MANPADS)

A limited number of MANPADS still exist in theater. The threat of MANPADS can come from anyplace in the theater, including border areas and neighboring countries. A common strategy is to have the MANPADS gunners work in pairs or small groups. The first MANPADS operator engages the aircraft. If the first missile fails to destroy the target, the additional MANPADS operator(s) opens fire. ACM MANPADS gunners will try to position themselves on high ground overlooking potential aircraft (especially helicopter) flight paths. This allows MANPADS operators more time to locate and fire on the aircraft. This tactic is more likely to be used in the warmer months since winter weather conditions limit the gunner's ability to survive at high elevations. A common tactic used by ACM soldiers is to attack aircraft at their most vulnerable moment (taking off or landing). When near airports, the MANPADS operators will choose a place along the takeoff or landing flight path and wait for an appropriate moment to engage the aircraft. After firing, gunners move to the nearest shelter or cache and conceal the launcher.

Antiaircraft Artillery/Machine Guns

Most large-caliber Taliban anti-aircraft artillery (AAA) was destroyed during initial air strikes against the Taliban in 2001. Prior to that time the Taliban had AAA ranging from 12.7 to 100 mm. Currently, the threat to coalition aircraft is from small-caliber (23-mm and smaller) AAA. Serviceability of ACM 37-mm AA guns is currently questionable. Guns larger than 12.7 mm are normally mounted on or towed by trucks. When possible, ACM forces will position themselves at higher elevations, allowing them greater visibility and fields of fire. The ACM forces will use machine guns in both anti-aircraft and antipersonnel roles.

DShK 12-7-mm machine gun:

One of the primary ACM AAA weapons is the DShK 12.7-mm machine gun. This weapon is deployed throughout Afghanistan and difficult to detect or track. The complete weapon system has been found cached in various places throughout the region, as have spare parts and ammunition.

- DShK requires a crew of two to four people when ground mounted (on a tripod), but only one gunner when vehicle mounted. The DShK has a tactical anti-aircraft (AA) range of 1000 meters with a maximum vertical range of 4200 meters. In the ground-support role, it has a maximum distance range of approximately 7800 meters.
- The DShK can be vehicle mounted or transported by man-pack or pack animal. It is used in both AA and anti-personnel roles (as are other small- and medium-caliber AAA weapon systems). The DShK has been one of the primary support weapons used by ACM forces against coalition forces in Afghanistan.

ZGU 14.5-mm machine gun:

The ZGU is a vehicle-mounted or towed AAA machine gun. It is possible to dismantle and transport the ZGU via pack animal or man-pack. Ammunition is readily available and has been found cached throughout Afghanistan. The ZGU requires a crew of 10 people to man-pack it but only a two-man crew for firing. The weapon has a tactical AA range of approximately 1400 meters against fast moving aircraft with a maximum vertical range of 3700 meters. In the ground-support role, it has a maximum distance range of approximately 5900 meters.

ZU 23-2 23-mm machine gun:

The ZU 23-2 is a towed or vehicle-mounted AAA machine gun. The ZU 23-2 normally has a five-man crew: the gun commander or crew chief, gunner, assistant gunner, and two ammunition bearers. The ZU 23-2 has a tactical anti-aircraft range of 2500 meters against fast moving aircraft, with a maximum vertical range of 5100 meters. In the ground support role, it has a maximum distance range of approximately 7000 meters. Unexploded 23-mm rounds present a particularly dangerous hazard. These rounds have been found throughout Afghanistan in and around cities, battle areas, and caches. Caution in handling or disposing of these rounds must be exercised.

Snipers

Snipers situated on mountainsides will target helicopters flying through mountain passes. Snipers will target the cockpits, attempting to kill the crew. Snipers will also target aircraft during landing and take off. The most effective weapons for this are high-powered rifles and machine guns fitted with optical sights. Even the venerable .303 Enfield can be effective against low, slow-flying aircraft.

SECTION IV: COMMAND AND CONTROL

Amateur or commercial brand VHF radios could be used by transnational elements, including al-Qaida and former Taliban forces, for tactical C2. Because these radios are line of sight, the signal is degraded by high ground between the transmitting and receiving stations. Normally, tactical leaders (squad level) operate VHF radios. At higher levels (above the equivalent of a company), a radio operator may be used. All ACM forces within Afghanistan use amateur or commercial brand HF radios. HF radios with the proper antennas are used for communications over longer distances, including over mountains.

The Afghanistan Wireless Communications Company (AWCC) is installing a global system for mobile communication (GSM) infrastructure. There is now a GSM system in five of Afghanistan's major cities: Kabul, Kandahar, Mazar-e Sharif, Herat, and Jalalabad. Konduz will be the sixth city to receive all of the necessary equipment for service. AWCC's goal is to have a GSM network installed in each provincial capital within the next 4 to 5 years. Each GSM base station is paired with very-small-aperture-terminal (VSAT) communications system. This combination has brought limited national communications, international, and Internet connectivity to those cities. ACM forces are communications parasites on host nations. Public switched telephone networks (PSTN), cellular telephone, satellite telephone, and Internet communications are used in Afghanistan. As Afghanistan slowly restores its communications backbone, ACM forces will increase their use of these systems. The primary satellite telephone systems that cover Afghanistan are Thuraya, INMARSAT, and AsiaSat. Al-Qaida leadership is probably using communications officers for many of their communications including satellite telephones.

Couriers are the most secure means of communication available to ACM forces. While secure, couriers are not time sensitive. The courier may not know the contents of a message if it is on paper or some electronic media. If the courier has memorized the message, it may be in brevity code. When operational information is passed between ACM forces, this is probably the method used. Couriers are taught ways of hiding information, including ways to take advantage of cultural biases. ACM forces will use a challenge-and-password system. The challenge and password system may be in Arabic if the force is all al-Qaida or a mixed ACM force. If the force is made up of only local soldiers, the challenge and password could be in Dari or Pushtu depending on the tribal affiliations of the forces. Challenges and passwords may be local sayings or proverbs.

Intelligence And Reconnaissance

ACM forces have a very effective human-intelligence collection and dissemination capability. Most ACM forces operate in their home areas and know the terrain and people there well. This knowledge aids their moving in and out of areas with ease, often using covered routes. ACM forces use this to their advantage, such as moving close enough to coalition forces to note friendly positions and security operations.

Since ACM forces have family and friends in the area, they can easily use these people to collect information on the surrounding area. This provides them with early warning of coalition activities. Moreover, it is very possible that Afghan persons employed by coalition forces are either ACM themselves or at least sympathizers. Take caution in providing mission-essential information to Afghan government forces until just prior to their need to know.

ACM forces use many commercially bought, off-the shelf radios that use HF, UHF, and VHF radio bands. Because radios can be used to listen as well as transmit, any radio can be used to intercept radio signals that are not encrypted. Therefore, if a coalition radio is sending in the clear, it is highly likely that ACM forces will be listening. While most ACM members do not understand English, enough do to make this a viable threat. ACM forces are not known to possess the capability to monitor encrypted communications.

Commercial radio scanners are available on the world market, and ACM forces are known to use these. When commercial scanners are used, they can quickly pick up non-secure communications and identify the information as useful or not. ICOM scanners are small enough to be hand held, highly portable, and used anywhere.

ACM forces, particularly those operating in areas where they have lived most, if not all, their lives, are well suited for tactical reconnaissance. These personnel are known to be very patient, and because they are familiar with the area, the people, and local events, they are particularly adept at conducting reconnaissance missions. ACM forces will patiently watch coalition force installations in order to determine strength, layout, key locations, daily routines, and particularly reaction force capabilities. ACM forces may conduct an attack or even an ambush only to have observers assess responses of the attacked force. It is not unreasonable to expect at least one observer on the inside of a facility that can report not only on defenders reactions, but also on the attack from the defenders' perspective.

ACM forces will use any means necessary to obtain information from the local population. They may pay rewards, exploit religious or tribal affiliations, or threaten locals with various forms of punishment or death. The same techniques may also be used to feed false information to coalition forces. The local Afghanistan population can be a potent source of information. Tribal chiefs and village elders are typically the ones receiving the most information and can pass it to ACM forces as easily as they can pass it to coalition forces. Consider the source of information and motivation of the source when acting on information obtained from the local population.

Checkpoints

The traditional fund-raising function of the checkpoints declined under the Taliban rule, although it continued to use them for the same purpose. The Taliban checkpoints were more accepted, since they were more systematic in nature than the ones operated by the warlords.

While tribal leaders or warlords may attempt to keep the imposition of unofficial tolls to a minimum, undisciplined and poorly paid Afghan Militia Force (AMF) members may demand payment from travelers. Unofficial checkpoints usually do not hamper coalition operations.

SECTION V: MOBILITY AND COUNTERMOBILITY

Mine Threat

Afghanistan remains one of the most heavily mined nations in the world, with nearly 5 million mines still uncleared. Mines are found in all areas of the country: in urban and rural areas, near water wells and irrigation canals, on roads, around mountain strong points, and in agricultural regions. All these areas have seen front-line fighting. Additionally, major military installations and strategic locations, such as airfields and major cities, were protected by extensive minefields. Border areas have been heavily mined in the past. The Afghanistan-Pakistan border was heavily mined with antipersonnel mines, especially from the border north to Kandahar. The Iranian border region was less heavily mined, but has extensive surface laid antitank minefields to prevent supplies being trucked in across the open desert region south of Herat. Rubble in many destroyed cities and villages has been mined, sometimes in multiple layers.

ACM forces and supporters can be expected to employ mines and other explosive devices in novel and ingenious ways against coalition forces. Well-experienced ACM forces have developed many successful and unconventional TTPs for using explosive devices against personnel and vehicle targets, particularly on trails, city streets, and roadways, especially if coalition forces set patterns of movement.

Markings:

Mines, (and in many cases, unexploded ordnance [UXO]) are marked when locations are known. In Afghanistan, improvised signs have been developed using readily available materials that will

not burn (wood is often stolen or cut for fires) or are not worth stealing such as stones and rocks. Mines and UXO will be marked with piles of stones or rocks. If paint is available, stones will be painted. The following should be seen as very reliable signs that mines are present.

- Rows of light-colored/painted white stones are used by the UN to mark safe lanes and cleared areas. Stones are usually in regular patterns and close together.
- Individual piles of light-colored rocks, unevenly spaced are used by the various fighting factions and locals to mark the minefield perimeters.
- Piles/individual rocks painted red are UN and faction danger area markers.
- Red lettering and marks painted on rock faces or building walls, i.e., start point (SP) are UN de-mining reference markers. Minefields will be close to these points. (Note: Lettering is normally on the safe side.)
- The UN uses white paint marks on walls to mark “cleared” buildings or areas. Approach with caution since it indicates that mines were in the area; there may be more.
- Locals use circles of stones surrounding objects to mark individual mines and items of UXO. Where there is one mine, there are usually more.
- Crossed sticks, pieces of debris on routes, and footpaths are signs of mines.
- Pieces of material (red) attached to poles, sticks, and walls are signs of mines.

Indicators:

ACM forces will take great pains to emplace mines carefully and to camouflage them. Initial efforts to camouflage a mine will be successful, but after a short time of natural weathering, this effect will diminish or will be exposed by nature. Coalition forces must be trained to spot unusual ground/vegetation conditions that might indicate unnatural activity such as mine laying.

- Depressions in the ground (regular/odd spacings).
- Raised patches of earth (regular/odd spacings).
- Wilting/dead patches of vegetation.
- Potholes in tracks.
- Circles of lush grass among thin grass.
- Trees, bushes, and scrap lumber not collected for firewood.
- Overgrown fields, footpaths, and buildings.

Coalition forces should also be observant of the local population. If there is an area where they do not go or an abandoned building that has not been salvaged, it probably indicates an unsafe area with mines, booby-traps, or other IEDs. Dead animals with missing/damaged limbs may also indicate mines are in the area. (Note: The animal may have walked some distance before dying.)

Reference has been made above to UXO, which is generally categorized as follows: dropped, projected, thrown, and placed ordnance. UXO may be found throughout Afghanistan and should neither be disturbed nor approached. ACM forces may, however, attempt to reuse some of this ordnance; in which case, it should properly be considered as a booby-trap or IED.

Improvised Explosive Devices (IEDs) And Booby-traps (BT)

Over the last 20 years, Afghan fighters have become adept at producing BTs and IEDs. Much of this experience was gained during the Soviet occupation, but experience gained in Bosnia and Chechnya have also contributed to this knowledge. BTs and IEDs will be sited to avoid detection to improve their effectiveness when activated. Although historically victim activated, recent ACM forces' trends indicate an increasing use of remote or command detonation, especially along roadways. The use of IEDs, such as BTs, is limited only by the imagination of the enemy. BTs and IEDs have the following characteristics:

- Usually explosive in nature
- Usually actuated when an unsuspecting person disturbs an apparently harmless object
- Designed to kill or incapacitate
- Designed to cause random, unexpected casualties and damage
- Designed to create an atmosphere of uncertainty and suspicion
- May be initiated either physically (trip wire, pressure plate, time fuze, etc.) or remotely (electronic device such as a cell phone or other electronic timer or delay)

The abundance of UXO and land mines has provided ACM forces with a ready supply of material for the construction of IEDs and BTs. There are many different techniques for employing IEDs:

- Coupling is linking two IEDs or mines to another, usually with detonating cord.
- Daisy chaining is linking mines, commonly AP type, with a detonating cord. Detonation of one mine causes the other mines to detonate. "Daisy chains" of mines and detonation cord over 200 meters long, involving several vacated buildings, have been discovered in Afghanistan.
- Boosting is stacking buried mines on top of each other to increase the force of the blast.
- Sensitizing antitank mines involves cracking the pressure plate on some nonmetallic mines in order to reduce the pressure needed to initiate the mine.
- A common practice has been to emplace two explosive devices with either a timed delay between explosions or remotely detonating each device to achieve maximum destruction or casualties. One example would be a car rigged with a small initial explosive device and a larger device, which is detonated (either by time delay or remotely) to kill or injure onlookers, EOD, police, or military personnel investigating the first explosion.
- Car/truck bombs, sometimes called vehicle-borne improvised explosive devices (VBIEDs) can serve multiple purposes. Small bombs may be used to attack personnel, convoys, or small structures. Large amounts of explosives, such as in a van or truck, are suitable in attacks against infrastructure such as larger buildings. ACM forces are capable of using such devices, particularly as they try to destabilize or degrade the security provided by government forces.

SECTION VI: LOGISTICS

Caravan And Convoy Movement

ACM forces will use the cover of convoys and caravans (hereafter referred to as convoys) in order to transport military supplies.

- Convoys are used to bring weapons, ammunition, and other supplies into Afghanistan from neighboring countries.
- Convoys use vehicles, livestock (camels, donkeys, or horses), or a combination of both for transportation.
- Convoys move almost exclusively at night to avoid detection by aircraft. Convoys traveling during daylight hours are usually decoys and rarely carry military-related materials. During the day convoys stop in well-concealed places such as canyons, caves, dry riverbeds, “green zones” (vegetated areas near oases and rivers), destroyed villages, or any other available form of cover.
- Convoys usually have their own air defense, including MANPAD surface-to-air missiles (SAMs) and vehicle-mounted machine guns. Both vehicle and animal convoys depend on advance observation teams or patrols to determine the safety of the route.

Vehicle convoy: Typical convoy deployment consists of three elements:

- **Advance observation team:** Personnel on horseback or motorcycle compose the advance team and precede the convoy by several miles. They often fire their weapons in order to provoke return fire from a suspected enemy or threat.
- **Decoy team:** A small portion of the convoy follows 15 to 45 minutes behind the observation team. This group is loaded with foodstuffs, clothing, or other nonmilitary material and serves as a decoy to draw out enemy troops.
- **Main element:** The significant part of the convoy, accompanied by armed Mujahedin fighters, follows as much as an hour or more behind the decoy team. If either the observation team or the decoy team are interdicted, the main element disperses and hides in available covered areas.

Animal convoy:

- **Advance observation team:** A teenager, an old man, or a couple of men with a donkey will lead the convoy by 2 to 3 km. As a rule, they do not carry weapons or a radio and use a small signal mirror to inform the next element about route security.
- **Decoy team:** The decoy team follows the observation team at a distance of 500 to 800 meters; the distance is adjusted to maintain line of sight to observe the mirror signals from the advance team. This element usually consists of 10 to 20 armed men equipped with a radio to communicate with the main element. They will often have two or three animals loaded with less valuable supplies to allay suspicion if stopped. If they come under attack, their mission is to offer sufficient resistance to allow the main element to turn back or take an alternate route.
- **Main element:** The main element follows 1 to 2 km behind the decoy team and disperses if either forward unit encounters threat forces. The most valuable items are usually carried in the middle of the convoy and are heavily guarded. When fighting

the Soviets, false (deceptive) convoys were often used. In this case, a real convoy does not follow forward patrols. Instead, the main element consists of 5 to 15 animals with 20 to 40 handlers, transporting nonmilitary items, such as food or clothing. This tactic prevented the Soviets from blanket targeting similar convoys for ambush.

Caches

Caches are used to supply ACM forces throughout Afghanistan. ACM forces typically travel with very light loads, sometimes without weapons and ammunition. As these forces arrive in their operational area, they are supplied from nearby caches with arms, ammunition, and, sometimes, additional supplies such as food, clothing, and communication equipment needed to conduct specific operations or missions. Cache points also provide convenient hiding places for weapons, unused ammunition, and other supplies upon mission completion, allowing ACM forces to move about without incriminating materials in their possession. Cache points are typically well concealed and range in size from small (containing a few rifles, machine guns, or RPG launchers and ammunition) to large (containing several hundred weapons of varying sizes, ammunition, communications equipment, food, clothing, and in some cases, shelter). Cache points include caves, houses, and possibly commercial or government facilities. Guards may be posted to protect cache points; the number of guards is determined by the size and importance of the cache. Most individuals/households in rural areas have their own small cache of small arms and ammunition. They are used for self-defense purposes and are often embellished with personal decorations. These caches should not be confused or mistaken for caches maintained by warlords or ACM forces, which include larger numbers of weapons and heavy or crew-served weapons

SECTION VII: DENIAL AND DECEPTION (D&D)

Technical Understanding And Knowledge Of Signatures

There are numerous potential scenarios where knowledge of target deception and signature management may be employed against coalition forces. ACM forces have demonstrated a basic (and sometimes effective) knowledge of D&D measures to counter coalition force capabilities. Some ACM forces, especially al-Qaida trained fighters, understand the principles of thermal and radar imagers and night-vision equipment and have disseminated plans for countering these sensors. The author of a document found in Afghanistan makes this distinction quite clear by saying night-vision devices see in the dark whereas a thermal imager is a heat detector.

Countermeasures

While few ACM fighters have a comprehensive knowledge of modern sensors, most fighters have learned the importance of countermeasures to degrade or defeat these sensors. Some of the following countermeasures are quite simple, but none-the-less effective.

Spider holes:

ACM fighters use various signature-control techniques to avoid being targeted by thermal sights and sensors. These techniques involve the use of “spider hole” fighting positions and vehicle coverings. The “spider hole” consists of digging a man-sized hole or finding a crack in rocks, which can be covered for concealment. Once the hole is prepared, it is covered by brush, blankets, and/or tarps. The coverings may also have a layer of snow, soil, or ice on top, or they may be wet. Vehicles may be concealed by covering them with a tarp that supports snow or soil in a manner similar to the spider hole.

Sensor savvy:

ACM soldiers used covering tarps to attempt to defeat infrared sensors and other means of detection. They put tarps over vehicles and blankets over themselves when they note an unarmed aerial vehicle overhead. Employed in combination with spider holes and placed beneath trees or bushes, tarps and blankets proved quite effective. They may be used due to a lack of purpose-made camouflage nets or coverings. They are also readily available, since many Afghans use them as tents or sleeping bags. Reliable information indicates that ACM forces understand the technical concept of reducing their signatures to blend with the ambient temperature of the terrain around them.

Thermal decoys:

Among the documents recovered from al-Qaida associated sites in Afghanistan was a document in Arabic titled “Information to My Afghani Mujahideen Brothers,” that outlined the basics of night-vision equipment and thermal imagers. It described a technique to counter thermal imagers that consists of creating thermal decoys with smoldering wood fires built in shallow pits “to make the pilot launch his missiles at the pit.” It discussed how to build and place these decoys with the intention of creating false heat-emitting targets.

- Subtle differences will differentiate between this form of heat-emitting false target and the heat signatures of real targets.
 - The decoy targets will appear somewhat brighter than a clothed fighter.
 - The decoy signature will also differ from that of a vehicle exhaust in that other parts of the vehicle that are normally present in the thermal image would be absent in the case of the deception. However, an observer unaware of a possible deception may not recognize these clues.
- Among the documents recovered from al-Qaida-associated sites in Afghanistan was a document that provided insight into how one might deceive radar with a decoy built from available materials.
 - The method described using pieces of metal, including tin cans interspersed with a pile of rocks, approximating the size of the vehicle or other asset (such as a crew-served weapon) that the decoy depicts.
 - This decoy, in combination with thermal decoys and signature management, could prove effective in target denial and deception.
 - Operationally, these methods could be used to simulate the presence of ACM troops in an area where they are not (deception) to conceal or to deceive coalition forces as to the disposition and composition of an actual ACM presence.

Tactical Responses

ACM forces may use a variety of tactical methods to counter coalition forces' capabilities to include:

- Spider holes, caves, or rocks to hide in or behind
- Decoys for equipment and positions
- Camouflage: individual, equipment, and positions
- Cloth coverings (blankets, tarps) to cover weapons, vehicles, and fighting positions.

CENTER FOR ARMY LESSONS LEARNED

- Blending with civilian population
- Dispersing into small units/teams for movement
- Traveling over hard or rocky surfaces to avoid leaving tracks
- Moving under cover of darkness
- Using commercial vehicles (delivery trucks, ambulances, etc.) to move fighters and or supplies
- Dampening ground in firing positions to reduce dust signatures
- Starting fires to create false targets for thermal sensors

ACM forces will use any available means to conceal their movements, positions, and intentions. Many of these methods are simple responses employing low technology that have proved effective.

CHAPTER 2

Universal Lessons To Support Tactical Operations In Operation Enduring Freedom

SECTION I: TIPS FOR CONDUCTING OPERATIONS IN AFGHANISTAN

Pre-Deployment Tips

Tip 1: Units should include battalion executive officers on the Pre-Deployment Site Survey (PDSS) to mitigate some of the challenges that units confront immediately upon arrival in country.

Tip 2: The PDSS should arrive at home station with at least 90 days before the advance party deploys.

Tip 3: As soon as the task organization becomes effective, commanders and leaders should work to establish cohesion and teamwork

Tip 4: Leaders at all levels need to be familiar with the capabilities and limitations of the different types of units that will be present in the brigade's AO in order to facilitate integration and maximize the use of each unit during operations.

Tip 5: The combined joint task force (CJTF) has a reserve component (RC) advisor. Leaders should consult with the RC advisor early and often when they have RC units under their operational control.

Tip 6: The Global Decision Support System (GDSS) is available for direct access to all services. Prior to deployment the unit should request and receive a password to access the Air Mobility Command GDSS using the SIPRNET. This web site allows the unit to enter the unit line number (ULN), mission identification (MID), or call sign to track real-time mission status.

Leadership Considerations

Leaders at nearly every echelon are executing tasks that are arguably two levels above their experience and doing so with great results. "Adaptive, flexible leaders," as outlined in the Future Force, are in fact present in these CJTF-180 formations today. Company commanders are entrusted with an area of operations that is 90 minutes by helicopter from their parent headquarters. They are working for and with Special Forces Operational Detachments, other government agencies and even the newly formed Afghan National Army. Units supporting CJTF 180 are operating in the Joint Inter-Agency Multi-National (JIM) environment at the lowest levels. The majority of JIM success can be attributed to outstanding small unit leaders.

Leaders must pay special attention to enemy counter-actions based on friendly actions. Evaluate the effectiveness of TTPs and determine if the shortcomings are due to the TTP, the circumstances, or the proficiency of execution. Share observations and lessons learned through AARs or daily intelligence summaries (INTSUMs).

Junior leaders are expected to understand the capabilities, limitations, and employment of weapons systems, platforms, and resources historically used by senior commanders (sniper teams, mortars, artillery, forward observers (FOs), attack aviation, close air support, unmanned aerial vehicles (UAVs), other government agency (OGA) integration, tactical relationships with Operational Detachment Team-Alphas (ODAs), civil affairs (CA), military police (MPs),

explosive ordnance disposal (EOD) teams, engineers, and interpreters.)

Junior leaders must understand how to detain a person under control (PUC), as well as limited initial interrogation techniques.

Troop-Leading Procedures (TLP)

- Best to progress from broad higher concept and intent to refinement at platoon/section-level; this also decreases likelihood of establishing routines
TLPs must become instinctive; situation changes almost hourly and rapid decision-making is the norm
- Intelligence preparation of the battlefield (IPB) is difficult day to day; map reconnaissance and threat tactics, techniques, and procedures (TTPs) are good guides to template enemy actions or positions
- Treat crowds as a danger area. Learn to move, communicate (both with the patrol and with the civilians), and exfiltrate or break contact.
- Maintain currency on anti-coalition attack trends (IED, multiple forms of contact from multiple directions, surveillance, and ambushes)

Adjacent Unit Coordination

- Plan for pursuit across boundaries; know your limits.
- Establish battle drills for operations across boundaries.
- Small units must be capable of reinforcement; the closest unit may be from a different command.

Personal Data Assistants

- Use for storing administrative information (manifests, battle rosters, next-of-kin (NOK), contact information, etc.).
- Can be used to store pictures of key personalities or persons from the wanted list; provides easy access and portability for soldiers manning checkpoints.
- Use voice recorder to record simple Pashtun phrases in the event the interpreter is not around

Command and Control

- Rapidly changing positions and several concurrent operations dictate that a troop/company/battery TOC track friendly movements, contacts, and other activity.
- All personnel must be proficient in use of the radio to report the following: contact report, spot report, situation report, and MEDEVAC request. Reports should be brief, timely, accurate, and thorough.
- Staff elements need to understand that they will be conducting operations outside the norm. For example, fire supporters are the non-lethal effects coordinators for information operations (IO), civil military operations (CMO), and clearance of fires.

Task Organization

- Anticipate rapid and frequent changes to the task organization; be ready for a non-standard mix of forces (e.g. company team consisting of two rifle platoons, anti-tank section, explosive ordnance disposal (EOD) section, military police (MP) squad, civil affairs (CA) team, tactical human intelligence team (THT), and interpreters)
- Every change in task organization requires leaders to review/rehearse SOPs and battle drills with the new personnel.

Civil-Military Operations (CMO)

- Use of local labor shows good faith, provides jobs to the local economy, and provides essential services to the base camp while allowing soldiers to focus on combat operations.
- Cordon and search operations should be followed by CMO-related activities to reduce the “stress” placed on locals, as well as to pursue information operation (IO) opportunities.

Coalition Forces

- Employment and integration of coalition forces requires continuous coordination. A liaison officer is indispensable for facilitating information flow.
- The unit receiving coalition forces as part of the task organization needs to review the memorandums of agreement (MOA) as soon as possible in order to begin planning for anticipated support. The CJTF headquarters must be proactive in providing MOAs to the gaining unit.

Individual Soldier Skills

What Soldiers must understand about Afghanistan:

- Many individuals have weapons.
- Afghans survived a very oppressive regime.
- Local/regional/tribal customs
 - Protocol for dealing with tribal/religious leaders
 - Protocol for eating/drinking/ceremonies
 - Differences between Sai'id, Sheikh, Imam, and other designations.
 - Call to prayer (five times daily)

Physical readiness training:

- Muscular strength to climb, fight, and haul - Resistance or weight training is essential; integrate pull-ups and dips; soldiers must be able to lift own body weight.
- Agility to move through rubble, houses, over obstacles - Use trail runs, climbing fences, leaping over or going under picnic tables, stairs, and/or mud, to enhance agility.

CENTER FOR ARMY LESSONS LEARNED

- Endurance to maintain pursuit, conduct long dismounted patrols, etc. - Use long sprints, hill runs, and other training to build endurance.
- Mental and physical toughness - Must be physically and mentally capable of dominating any situation.
- Physical toughness and discipline to wear ALL equipment for extended periods - During training do not unblouse pants or roll up sleeves; get accustomed to sitting and walking with interceptor body armor (IBA) and modular lightweight load carrying equipment (MOLLE) combination and other accessories (Camelbak , full magazine pouches, extra crew served ammunition).
- Train in extreme conditions including sleep deprivation, food/water deprivation, heat, cold, and crowds.

Weapons proficiency:

- Must conduct weapon maintenance.
- Qualification must be the “gateway” to start training, not the culmination. The confidence to hit a target from any position starts with qualification.
- Must be capable of killing point targets at extremely close and/or long range within seconds. Fire must be aimed.
- Must integrate reflexive shooting: Vary unknown ranges and use single and multiple targets, different target types, and different firing positions.
- Cross-train on all weapons systems, to include low-density (AT4, M203, and grenade). Understand capabilities; know maximum engagement line.
- Train to accurately shoot past 300 meters with rifle.

Combatants:

- Must be capable of dominating any fight (unarmed, pursuit and capture, knife, and club)
- Skill set should include restraining, martial arts, knife fighting
- Capability to escalate “unarmed combat” force

Casualty evacuation (CASEVAC)/medical treatment:

- Primary means is non-standard, usually to a hasty casualty collection point/landing zone (CCP/LZ)
- Be prepared to extract casualty while in contact
- Combat lifesaver (CLS) requirement is a minimum of one per fire team; best case to ensure success is one CLS for every three soldiers.
- Must be proficient at self and buddy aid.

Small Unit Tactics

Dismounted maneuver:

- Well-trained small unit maneuver is key to success.

- Fire team/squad battle drills must be instinctive.
- Teams must anticipate individual actions; repetition will solidify and synchronize the team.
- Must vary times and routines; terrorists and criminals identify routines very rapidly and adjust
- Best traffic checkpoints are hasty, of short duration, and deny the ability to bypass (includes random traffic stops).
- The current Ground Laser Designator System (GLDS) for conventional forces is too heavy and cumbersome for mountainous terrain. Precision-guided munitions are essential for this type of combat. Special operations forces have the system conventional forces need.

Close quarters combat (CQC):

- Small units (platoon occasionally, more often section) must know how to clear dwellings and identify hiding spots.
- Target identification must be very discriminatory; most dwellings have several women and children and usually minimal combatant threat.
- Use caution not to damage premises.

Urban land navigation:

- Precision lightweight Global Positioning System (GPS) receiver (PLGR) proficiency is key.
- Must have updated 1:25,000 or smaller military grid reference system (MGRS) maps or quality street/road maps.
- Force XXI battle command brigade and below (FBCB2) is only good for vehicles with systems and if monitored by a headquarters element (i.e., message traffic).
- All personnel must know and understand the principles of urban land navigation (includes identifying characteristics of different types of man-made structures).

Mounted maneuver:

- Light infantry units in Afghanistan often receive vehicles to add mobility. This requires training in tasks not normally part of a light infantry unit mission essential task list (METL).
- Units need to train on mounted maneuver (battle drills, mounting, dismounting under fire).
- The most common maintenance requirement for movement operations in OEF is tire repair/change. Soldiers need to know how to change tires.
- Soldiers with previous experience driving off road 4X4 vehicles or tractors excel as drivers in the operating environment.

Urban mounted maneuver:

- Always plan for heavy civilian traffic.

CENTER FOR ARMY LESSONS LEARNED

- Must conduct a map reconnaissance and identify likely chokepoints, ambush sites (intersections), and overpasses.
- Must plan primary and alternate routes to avoid potential hazards.
- Offensive driving is a must, and halting because of obstacles may create a kill zone. Avoid becoming predictable, but continue to drive safely.
- Learn the capabilities of the vehicle including: the height a vehicle can jump (curbs and other obstacles), the turning radius, high speed maneuver ability, and the estimated width of the vehicle in order to navigate narrow passageways.

Actions on contact:

- Most engagements last less than one minute.
- Rapid maneuver against threat ensures either destruction or capture; enemy will usually break contact after initial engagement, fire 3 or 4 magazines indiscriminately and run.
- Fire and maneuver is not always an option; maximize small element in over watch while a maneuver element closes on enemy (preferably from an assailable flank)
- Weapons fire may or may not be a threat (may also in celebration, “green-on-green,” etc.); be aware of the different occasions where weapons fire may be prevalent.
- Not all personnel under control (PUC) are soldiers and do not follow instructions well; follow procedures for handling enemy prisoners of war (secure, search, segregate, silence, safe to the rear) when handling PUCs.

Intelligence:

- A brigade combat team intelligence section, augmented with personnel from the division military intelligence battalion, can perform all intelligence functions in a JIM environment on a continuous basis for short periods.
- The ability to provide imagery products and signal intelligence (SIGINT) products on a moment’s notice without submitting a request for information (RFI) is a significant force multiplier; however, it is not feasible in this environment (no ground lines of communication (LOC) and great distances between headquarters) to depend on products provided by the next higher echelon.
- When using interpreters, a BCT needs a linguist or interpreter manager to maximize resources and ensure unity of effort. The linguist manager does not need to locate with the brigade combat team, but must be accessible.
- Magnetic sensors are ineffective in this terrain. Plan on infrared and seismic acoustic for primary sensors.
- Signal intelligence (SIGINT) and human intelligence (HUMINT) provide the majority of the actionable intelligence and result in “bottom up planning.”
- Information operations (IO) are conducted at many levels. Establishing a medical capability (MEDCAP) for locals can increase the HUMINT provided to coalition forces.
- The presence of a female linguist and/or soldier may be critical if local females are searched, interrogated, or present during a cordon and search.

Fire Support

Long-range observation in the mountains allowed for effective use of 60-mm mortars in the direct-fire mode. The open high mountain desert terrain provides excellent long-range observation to leaders and mortar crews. Company 60-mm mortars in the direct fire mode successfully engaged enemy targets.

Cave Clearing

Cave clearing tactics, techniques, and procedures need to focus on basic battle drills and training similar to room clearing. Tasks for cave clearing include identifying the cave, setting a support by fire (SBF) position, employing bunker buster munitions, maneuvering the assault element into position, employing fragmentary grenades, and clearing. Clearing caves is basically a battle drill. (Note: See "Section II: Operations Against Cave Complexes" for additional information.)

Explosive Ordnance Disposal (EOD)/Combat Engineers

- Units best employ EOD teams in an area support role, providing EOD support to several units in a geographic area. If the EOD unit is under the operational control of a battalion task force, the task force commander can allocate the EOD unit to the company team that can best utilize its unique capabilities.
- EOD teams identify unexploded ordnance and destroy them.
- Utilize combat engineers to dispose of unexploded ordnance only if they are the only means available.
- During route clearance missions, use engineers to destroy mines and create clear lanes for the maneuver elements. Leaders should not use EOD personnel for route clearance.

Entry Control Point (ECPs) Operations

Units responsible for entry control points (ECP) prefer to have the following equipment available: infrared capability in lieu of night-vision goggles, sensors (at a minimum, the Tactical Automatic Sensor System [TASS] and the wide-angled surveillance thermal imager [WSTI]), hand-held thermals, ION scanners, explosive detection scanner, vehicle-mounted thermal imager, flex cuffs or other means of restraining personnel placed in custody, metal detector (Garret HD wand in silent/vibrate mode), and mirrors. Having this equipment would alleviate requisitioning and initial manpower and resource drain on the unit upon entering the theater of operation.

FM Communications

FM communications can be ineffective in Afghanistan due to the high altitude and operating distances. Units are operating in dispersed locations over vast distances with a limited number of TACSAT radio. The TACSAT system is slow and requires deliberate conversation. Army bandwidth may be too narrow for effective communications.

SECTION II: SOLDIER LOAD IN A DESERT ENVIRONMENT

"The machine has made warfare ponderous but has also given it greater velocity . . . it is conspicuous that what the machine has failed to do right up to the present moment is decrease by a single pound the weight an individual has to carry in war."

— S.L.A. Marshall, *The Soldiers' Load and the Mobility of a Nation*

The fighting capability of an infantry soldier is directly related to his load. There is a maximum individual load limit that cannot safely be exceeded if an infantry soldier is expected to accomplish his combat mission. The following observations demonstrate how important it is for commanders to understand their responsibilities for load planning and discipline.

Observation 1: The weight a soldier can carry is based on his weight, the climate, the terrain, and the stress he has faced or is currently facing.

Observation 2: Prior to initiating the mission with definitive items that compose the soldier's load, the unit must consider the environment, weather, mission, and soldier requirements. Each mission will require an analysis of the essential items that are necessary for survival and combat operations.

Observation 3: No amount of training can change the body's reaction to carrying excessive loads. The commander's involvement in analyzing the situation and the level of risk involved is the key to determining what is mission essential.

Observation 4: Vehicles will not always be available for the light fighter to carry his essential loads of ammunition, food, and equipment, but should be used whenever practical.

Observation 5: The fighting load for a properly conditioned soldier should not exceed 48 pounds, and the approach march load should not exceed 72 pounds including all clothing and equipment, either worn or carried.

Observation 6: Overloading the soldier can get him killed. Develop a unit SOP that strictly limits what is carried on combat operations and exercises, and enforce those limits.

Observation 7: Fatigue is the infantryman's life in the field. Even in the most benevolent terrain, without rest or support, fatigue can reduce an effective unit to a leaderless gaggle. With rough terrain and bad weather, the effects of fatigue multiply exponentially.

Observation 8: Soldiers carry extremely heavy loads even in warm weather. That weight slows movement and increases fatigue.

Soldiers need a packing list that makes sense. Carry what is required for mission accomplishment, but allow a minimum of comfort items. Train your CSS operators to make up the difference. Leaders, beginning at the team level, should conduct good PCIs to ensure the packing list is adhered to. A sample of a packing list is provided below, including the weight of everything a soldier might wear or carry.

Sample Packing List – Individual Rifleman Conducting a One-Day Operation

- Advanced combat helmet - 3 lbs.
- Interceptor body armor with small arms protective inserts (SAPI) plates – 18 lbs.

- M-4 carbine with AN/PAQ-4 and M68 CCO – 15 lbs.
- Assault pack containing the following items – 20 lbs.
 - 100 ounces water (in Camelbak)
 - 1 magazine of 5.56-mm ammunition
- Night vision device (AN/PVS 7D)
- 500 ml IV bag
- 1 VS-17
- Combat lifesaver bag – 5 lbs.
 - Notebook
- Pistol belt with the following items – 8 lbs
 - Fighting knife
 - M9 Pistol
 - 3 magazines of 9-mm ammunition
- Modular lightweight load carrying equipment with the following items – 18 lbs.
 - 7 magazines of 5.56mm ammunition
 - 1 Garmin/ETRX (Global Positioning System [GPS] device)
 - 1 pair black gloves
- 1 lensatic compass
- 1 camouflage stick
- 1 leatherman tool
- 1 strobe light
 - 1 flashlight
 - 1 snap link

This is a typical fighting load (including assault pack) and weighs 82 pounds. Not included are cold weather gear, mission-specific equipment (demolition, breaching tools, litters), ammunition for crew served weapons (extra machine gun ammunition or mortar rounds), radios, and extra batteries.

Sustainment load would also include sleeping gear, extra cold weather clothing, additional food and water, and extra batteries. Most units depart the fire bases with fighting light load and have the sustainment loads brought forward by air or ground transportation (HMMWVs or GATORS)

SECTION III: AVIATION OPERATIONS IN AFGHANISTAN

General Aviation (Combat, Air Movement, and Resupply)

Because of operational distances and the mountainous terrain, Army aviation provides the center of gravity for operations in Operation ENDURING FREEDOM (OEF). Ground maneuver units rely on aviation for resupply, transportation, medical evacuation, close combat attack (CCA) support, and quick reaction force (QRF) support. Forward area refuel and rearm points (FARPs)

are often required to support operations. Rearm and refuel capabilities exist at Bagram, Kandahar, and the primary forward operating bases.

Forward operating bases (FOBs) and safe houses are resupplied using the combined joint task force (CJTF) aerial resupply plan. Overlapping resupply missions are conducted weekly from both Bagram and Kandahar. The CH-47 is the primary asset used for aerial resupply; however, UH-60 augmentation is often required to meet mission requirements.

AH-64 aircraft are suited for OEF operations. The 30-mm cannon and the 2.75-inch rocket systems are extremely effective. HELLFIRE missiles are occasionally used in a non-standard role; however, they need a more explosive Hellfire warhead to properly defeat anti-coalition member (ACM) networks. These networks consist of start points and release points in caves, wells, and other man-made structures such as buildings.

Attack aviation units regularly conduct day and night CCA training with ground maneuver forces. AH-64 crews are required to transition from aircraft onboard vision systems to helmet mounted night-vision systems during many night engagements. Helicopter sustainment gunnery programs are tailored to the threat and consist primarily of running and diving fire techniques. AH-64 units have selected seven running or diving fire engagements greater than 500 meters and less than 2000 meters to complete Table VIII requirements. Hence, Table VIII is effectively tailored to the current operations.

Positive identification (PID) during CCA is an issue that must be addressed. There are two primary concerns with PID:

- AH-64 aircrews have difficulty identifying targets marked by ground maneuver unit infrared (IR) sources such as the PAC IVC and similar systems. These systems are not compatible with the AH-64 on-board Pilots Night Vision System (PNVS) and the gunners Target Acquisition Designation System (TADS). The gunner (front-seater) is required to transition from the TADS to the Helmet Mounted Night-Vision Goggle System to acquire the IR marked target. The result is increased target acquisition to target destruction times.
- The AH-64 laser cannot be detected with existing night-vision goggle systems, therefore, the ground maneuver unit has difficulty confirming that the AH-64 has acquired the correct target. Again the result is increased target acquisition to target destruction times.

UH-60s and CH-47s provide the air movement/air assault capability to CJTF-180. Air movements range from team insertions to brigade level air assaults. Aviation operations occur between 4,500 and 10,200 feet above mean sea level (MSL). Aircraft power margins and pilot skills are tested. Units developed and implemented various successful high-altitude training programs to mitigate inherent risk, as well as build aviator proficiency and confidence.

Lessons:

Lesson 1: Army aviation is a tremendous combat multiplier in support of ground forces in a mountainous environment.

Lesson 2: Blue Force Tracker is a combat multiplier; provides asset visibility as well as an alternate means of long distance, over-the-horizon communications.

Lesson 3: Aircrews must increase night-vision goggle proficiency; night CCAs take extensive coordination.

Lesson 4: AH-64 aircraft are ideally suited for operations in OEF; running and diving fire is the norm. The 30-mm cannon is the weapon of choice due to its accuracy and lethality.

Lesson 5: The combination of intensive boresighting techniques, coupled with gunnery sustainment programs, continue to enhance pilot competencies.

Lesson 6: Aircraft, including quick reaction force (QRF) and medical evacuation (MEDEVAC), are pre-positioned “closer to the fight,” thus reducing alert, employment, and arrival times.

Lesson 7: Aviation high altitude training and sustainment training is a priority.

Medical Evacuation (MEDEVAC)

MEDEVAC tactics, techniques, and procedures (TTPs) have been developed to support operational requirements. OEF MEDEVAC units require armed escort aircraft and often a trail aircraft. MEDEVAC units adjusted traditional MEDEVAC procedures to adapt to the OEF environment. Units developed TTPs that include AH-64 armed aerial escort and point of injury (POI) security as well as trail aircraft (UH-60) TTPs for transporting civilians.

MEDEVAC units evacuate casualties from points of injury (POIs) located in high to moderate threat areas. Points of injury (POI) to treatment facility distances routinely exceed 60 minutes. In situations involving critically urgent casualties, extensive en route care, coupled with timely Blue Force Tracker updates sent to receiving care facilities, are saving numerous lives.

MEDEVAC units are routinely required to transport civilians and personnel under control (PUC). Parents accompany the child to the hospital and villagers learn through the parents that Americans are not to be feared. Eventually village fear is substantially reduced, and a baseline working relationship is developed in that village.

Standard crew task organization consists of two pilots, two crew chiefs (one or both are medically trained), and one additional medic or MP (dependent on security requirement for PUC). An additional seat is installed on the aft left bulkhead to accommodate the additional crew member. The cabin heat duct was removed to install the seat.

Lessons:

Lesson 1: Often it takes two personnel to provide en route care; one to take vital signs or perform a procedure and the other to deliver medicines or tend to other areas.

Lesson 2: When transporting a PUC, it takes one person to restrain the casualty (PUCs are routinely belligerent), while the other administers medical care. The PUC SOP requires the PUC to be guarded during transportation; MEDEVAC units have included restraining devices such as FLEX CUFFS to their basic load.

Lesson 3: The additional crew member performs important tasks such as aircraft clearance, PUC restraint or security, point of injury (POI) security, and/or sending vital patient statistics and status via Blue Force Tracker text messaging to the level II or III care facilities in preparation of arrival.

MEDEVAC aircraft reconfiguration is dramatic. A locally purchased toolbox is installed in the rear of the cargo compartment. The suction, propak (vital sign monitor), life pack 10 (cardiac defibrillation, cardiac pacer) two D cylinder oxygen tanks, and other small medical supplies are stored in the toolbox. The rescue hoist is installed on all aircraft. Other medical equipment,

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such as the SKED (collapsible litter), portable oxygen bags, advanced air way bag, head immobilization bag, hair traction, and mast pants, are secured to the rear aft bulkhead. Survival bags are secured over the left rear fuel cell. The Blue Force Tracker and SATCOM radio equipment rack is mounted between the two crewmember seats. One extra case of bottled water is carried on all aircraft just aft of the SAS/FPS (stabilization augmentation system/flight path system) computer access door. All crew flight gear is stored behind the pilot seats. Two backboards are secured to the cabin ceiling between the seat bar and the two repel rings. One litter is secured to the left two upper 3500 pound tie down rings. The other litter is stored and secured to the cabin floors using the 5000-pound tie down rings and 2500-pound cargo straps and/or D rings.

MEDEVAC aircraft in OEF conduct operations without carousels installed. According to commanders, the carousels add little value, reduce valuable cargo compartments space, and add unnecessary weight to the aircraft. The TTPs listed above are extremely effective and could not be implemented with the carousel installed. Carousel removal increases the patient care area.

Aircraft basic loads include rapid sequence intubations (RSI), suction, cardio pulmonary resuscitation (CPR) and defibrillation equipment as well as numerous IV bags. Each of these systems is used in flight. This equipment is vitally important to patient care considering the long POI to treatment facility flight times. Current MEDEVAC units in OEF are National Guard units. These units have emergency medical technician (EMT) qualified medics and crew chiefs. Future active duty Army relieving units may not possess these qualifications.

OEF MEDEVAC units do not use existing aircraft ballistic blankets. MEDEVAC units in OEF are fielded with UH-60A aircraft. The current issued aircraft ballistic blanket weighs approximately 600 pounds. This is a significant limitation when operating at altitudes between 4,500 to 10,200 feet above mean sea level (MSL). When installed, the existing ballistic blanket provides protection to the cargo compartment only. No crew protection is provided. The existing ballistic blanket is not waterproof. Blood from casualties literally soaks into the blanket creating aircraft sanitization difficulties.

MEDEVAC units researched and discovered the Ballistic Protection System (BPS). This system can be installed into both UH-60 and CH-47 aircraft. The system is modular in design, can be tailored to conform to many requirements, can provide protection to crew stations and cargo compartments, and is waterproof. Depending on threat and environmental conditions, units can tailor the system to protect the crew compartment, the cargo compartment, or both. The BPS waterproof feature allows crews to rapidly sanitize the cargo compartment between missions.

Lessons:

Lesson 1: Emerging MEDEVAC TTPs are being updated; however, deploying units must receive them prior to deployment.

Lesson 2: Extended distances from POIs to treatment facilities make en route patient care more important than ever.

Lesson 3: Deploying OEF medics and MEDEVAC crew chiefs should be EMT qualified.

Lesson 4: Unit aircrews, crew chiefs, and maintainers should conduct on site reconnaissance to learn the TTPs for aircraft configuration.

Lesson 5: MEDEVAC crews should attend high altitude training and develop high altitude training programs.

Lesson 6: MEDEVAC crews must be “ambassador soldiers.” They routinely interact with the civilian populace and must thoroughly know country history and IO themes.

Maintenance

Aviation units in OEF are flying 3-4 times their respective home-station flying hour programs while maintaining comparable home-station operational readiness rates. Increased OPTEMPO, combined with the desert environment, are stressing many aircraft components and resulting in increased parts requirements. Units are exercising the supply system. Aircraft parts tracking from Continental United States (CONUS) to theater is reliable because of Aviation Intermediate Maintenance (AVIM) Supply Support Activities (SSAs) tracking systems. Two primary constraints initially plagued inter-theater parts distribution: (1) Transportation control number (TCN) was lost when the item was combined into a ‘multi-pack’. TCNs are now tracked on a multi-pack TCN to maintain visibility. (2) There was no ‘UPS/FEDEX’ contract to expedite aircraft-on-the-ground (AOG) or critical repair parts; hence, a DHL contract was established and managed by the aviation intermediate maintenance (AVIM).

Units are maintaining manageable aircraft phase bank percentages and are often performing scheduled phase maintenance faster than at home station. Bagram and Kandahar have established maintenance facilities for both unit- and intermediate-level maintenance. Logistic assistance representatives (LAR) are also on-site to provide immediate technical advice and repair capabilities. Both Bagram and Kandahar have logistical and maintenance contractor support to support SSA and aircraft phase operations respectively.

The aircraft are operated in a demanding desert environment. The main issue is dust/dirt. The aviation community reduced this environmental factor by conditioning improved landing areas with a soil stabilizer (almost a glue) covered with aggregate rock. This reduced the dust cloud created by landing/departing aircraft. Aircraft were pressure-washed after missions to reduce component wear.

Maintenance trends include:

- The dusty environment caused increased wear on the CH-47 swashplate’s lower seals. Daily inspections and additional purging/cleaning is being conducted.
- AH-64 stabilator bushings require replacement because of dirt.
- T700-701C engine receives a cleaning with ultrasonic tank during phases.
- ALQ-144/156 systems are having continual problems due to the heat and dust.
- AH-64 APUs need replacement due to high altitude and dusty conditions.

SECTION IV: SPECIAL OPERATIONS FORCES (SOF) IN AFGHANISTAN

The Operation ENDURING FREEDOM (OEF) combined joint special operations task force (CJSOTF) has operational control (OPCON) of many of the special operations forces (SOF) in Afghanistan. The CJSOTF commands and controls (C2), de-conflicts, synchronizes, and resources the SOF operations in theater.

Under the CJSOTF, special forces (SF) battalion commanders command forward operating bases (FOBs). The FOB staff is comprised primarily of the battalion staff. The FOB commands and controls several advanced operating bases (AOBs), built around the structure of Special Forces (SF) Operational Detachments-Bravo (SFODBs). The AOBs are an extension of the FOB for

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C2, communications, and logistics. The AOBs are strategically located to C2 the efforts of their subordinate SF Operational Detachments-Alpha (SFODAs), who are located among the population in selected locations.

The SOF units are conducting a wide array of operations including unconventional warfare (UW), counter insurgency (COIN), and advanced special operations (ASO). The SFODAs are conducting integrated operations with the conventional units in theater and coalition SOF units, as well as other government agencies (OGS). SFODAs are also conducting UW operations with the newly formed Afghan National Army (ANA) and the Afghan Militia Force (AMF).

The unique capabilities of the SFODAs are ideally suited to combat the asymmetrical threat that exists in theater. SFODAs are trained, organized, and equipped to conduct UW operations for extended periods. The ASO capabilities of SF have proven very effective for combined joint task force (CJTF) operations.

The SF units work primarily with the Afghan National Army (ANA) and the Afghan Militia Force (AMF). In a typical scenario for cordon and search operations, the SF units receive combat information from Afghan civilians, develop a target intelligence packet (TIP), and conduct rapid mission planning and preparation. The SFODA will submit their concept of operations (CONOP) through the AOB or FOB to the CJSOTF for approval. The SFODA that developed the TIP and submitted the CONOP will conduct the search portion and the ANA or AMF will conduct the cordon operation, providing security and force protection for the SFODA. This technique has been extremely successful during OEF.

SFODAs established and operate a medical clinic treating over 2000 host nation civilians a month. Clinics are a major success story for civil military operations in this region. The service provided by the SFODAs is making significant progress in the stability and support operations in theater. The establishment of a clinic significantly enhanced SOF force protection and combat operations. On numerous occasions the patients in the clinic and host nation personnel volunteered combat information to the SFODAs on improvised explosive devices (IEDs) and weapons caches, as well as enemy activity in the region. The SFODAs use this information to plan and execute combat operations.

The special forces units and general purpose units (GPF) frequently conduct integrated operations in OEF. The UW capabilities of special forces, combined with the firepower and manpower of the GPF has been a successful, integrated approach to combat operations in theater. SFODAs often lack the manpower and firepower for force protection and security during operations. Integrating the infantry with SF has proven to be useful to bridge this gap. This integration has worked well at the operator level. Infantry companies and platoons integrate and work well with SFODAs on the ground. At battalion level and above, C2 relationships have been a challenge.

There is no template for C2 relationships during these operations. Flexible C2 relationships must be used in time sensitive missions. Intelligence in theater is regional and very perishable. Units often must respond to intelligence leads rapidly. Flexible C2 and a rapid response must be achieved in this environment.

Lessons:

Lesson 1: UW operations are the most effective way to combat non-compliant forces in this asymmetrical threat environment.

Lesson 2: General purpose forces (GPF) have conducted integrated operations with SF and have adopted some of the UW tactics, techniques, and procedures of SF to conduct counter-noncompliant force operations.

Lesson 3: Continuing and expanding these civil military operations denies the enemy the ability to exploit and co-opt the local population and enhance unit force protection and combat operations.

Lesson 4: SF and GPF units must train together before being forced to operate together during operations. **Habitual training will develop unit leadership that knows and understands the capabilities of both conventional and unconventional forces.**

SOF Capabilities

- Direct action: Short-duration, small-scale offensive actions such as raids, ambushes, hostage rescues, and “surgical strikes.”
- Strategic (special) reconnaissance: Clandestine operations in hostile territory to gain significant information.
- Unconventional warfare: Advising and supporting indigenous insurgent and resistance groups operating in the territory of a common enemy.
- Foreign internal defense: Assisting host nation military capabilities to forestall or defeat insurgent activities.
- Civil affairs: Promoting civil-military cooperation between U.S. military forces and the foreign governments and populations.
- Psychological operations: Influencing the attitudes and behavior of relevant populations to assist in accomplishing security missions.
- Humanitarian assistance: Providing various rudimentary services to foreign populations in adverse circumstances.
- Theater search and rescue: Finding and recovering downed pilots and air crews, sometimes in combat or clandestine situations.
- Counterterrorism (CT): Operations conducted to preempt terrorist incidents abroad and activities to assist or work with other CT-designated agencies in the United States.
- Such other activities as the President or Secretary of Defense specify.

U.S. SOF

Army SOF (ARSOF) includes special mission units, special forces, Rangers, special operations aviation, civil affairs, psychological operations, and special operations support units. The most frequently deployed SOF assets in support of OEF are civil affair (CA) units, which provide experts in every area of civil government to help administer civilian affairs in theater.

Air Force SOF Command (AFSOF) includes special operations wings, special tactics groups, and training groups. Air Force SOF provided unmanned aerial vehicle (UAV) and AC-130 gunship support in Afghanistan. The AC-130H Spectre gunships' primary missions are close air support, air interdiction and armed reconnaissance. Other missions include perimeter and point defense, escort, landing, drop and extraction zone support, forward air control, limited command and control, and combat search and rescue.

Naval Special SOF includes sea, air, and land teams (SEAL), special boat units (SBUs), and SEAL delivery vehicle (SDV) teams. Although Afghanistan is a landlocked country hundreds of miles from shore, SEALs formed a significant portion of the U.S. SOF presence in Afghanistan.

Coalition SOF Support

Coalition partners provided an array of conventional forces; however, many countries, including Australia, Canada, Denmark, Germany, and Norway, contributed to special operations.

SECTION V: BASE CAMP OPERATIONS

Base Defense Techniques

The common tasks associated with successful base defense operations include:

- Establishing the base defense coordination net.
- Passing indications and warning (I&W) to unit TOCs and all personnel on the base.
- Raising force protection levels for all soldiers on base.
- Activating and manning all perimeter supplemental positions.
- Reacting to/stopping perimeter breach by armed personnel.
- Reacting to improvised explosive device (IED) incident.
- Reacting to attack from indirect fire or air attack. Activating the bunker occupation plan.
- Reacting to/evacuating a casualty.

Actions for base defense should be clearly outlined in the base defense SOP. The base defense SOP should be disseminated down to the soldier level, ensuring that every soldier understands his part in the base defense plan. Base defense exercises should be conducted regularly to ensure compliance with the SOP. It is too late to discover a flaw in the base defense plan when an actual attack occurs. Units should consider the following when creating or updating base defense SOPs:

Force Protection Levels

A systematic approach needs to be established to alert all units on a base about the increase in the force protection level. Often, isolated units and civilian/government organizations are overlooked.

Soldiers need to ensure that protective equipment, such as body armor and protective mask, is readily available. Units, especially staff section NCOICs, must establish an SOP based on the current threat for ensuring protective equipment is on hand.

Bunkers:

- Engineers should routinely inspect bunkers to ensure that they are safe to occupy.
- Units that maintain bunkers should ensure that a plan exists to provide light, heat, food, and water for the bunker. In the event that bunkers are occupied for extended periods, these life support items are essential.
- When a bunker occupation plan is activated, each bunker must have a type of communication means to ensure that soldiers remain informed of the situation. Either a landline or an FM radio will work.
- There must be a plan to ensure accountability of personnel when a bunker occupation plan is activated. There will be different personnel in different bunkers depending on time of occupation.

Alarms:

- Alarms, such as sirens, need to be tested routinely. Alarms should be heard throughout all areas of the base. Supplemental alarms, such as vehicle horns, may need to be used to reach isolated areas of a base.
- Different alarms can be used to distinguish between different types of attacks. One type of alarm can signify an air/mortar/artillery attack and a different type of alarm can signify a ground attack. Different actions may be required of soldiers for these two types of attacks.
- New/transient soldiers and visitors
 - Units should ensure that new soldiers are briefed on force protection levels on the first day they arrive in theater. Units should also provide guidance to newly arrived soldiers on actions to take in the event of an attack on the base.
 - Soldiers in transit and visitors may be at a base when it is attacked. These soldiers will not be aware of the actions that are required of them in the event of an attack. It is the responsibility of all soldiers to assist and provide guidance to these visitors who are not familiar with the base SOPs.

Civilians/local nationals on base:

There may be many local nationals on base doing various jobs. These local nationals need to be accounted for, ensuring their safety from attack. The safety of soldiers should be considered in the event that some of these local nationals decide to participate in the attack.

Perimeter security:

- Varying the patterns or activities of base camp security helps avoid routines and reduces the possibility of being targeted.
- Effective base camp security measures are the best precaution to deter prospective intruders from attempting a base camp penetration.
- Constant assessment and re-evaluation of incidents and reporting from units and convoys assist the S2/G2 in identifying trends and analyzing the tactics and techniques of perpetrators.

- Proactive CID programs are the cornerstones to a thorough investigation of incidents, and civil affairs campaigns assist in identifying community needs and the dissemination of information.

Alert procedures:

- Alert procedures vary slightly for each base, but are generally initiated by an alarm followed by instructions issued over a public address system. The alert is also passed by word of mouth by inhabitants of the base.
- Once initiated, personnel occupy their battle stations or the bunkers (depending on the battle drill). Units ensured accountability of personnel and report the status to the Base Defense Operations Center.
- Stand down from the alert is issued by public address system.

Civilians inside the base camp:

- There are many civilians inside the wire at any given time. These civilians include local nationals, contractors, civil servants (DOD and DA), as well as personnel from other government agencies.
- Civilians need to be accounted for and secured at a protected location. If the situation permits, local civilians should be escorted outside the wire.

Command and control of the perimeter defense:

- The Base Defense Operations Center (BDOC) is responsible for command and control of the base during an attack.
- Each living area has a commander responsible for accountability and security of all personnel. These commanders take direction from the base operations or airfield support task force commanders during base defense operations.
- Regardless of rank or duty position, individuals should take direction from designated base defense leadership during an attack. Designated key and essential personnel who will not assist in the base defense plan should move as soon as possible to their assigned positions in the TOC or JOC.

SECTION VI: TACTICAL CONVOY OPERATIONS

Convoy Planning and Preparation Procedures and Tips

This section contains useful information that augments doctrinal guidelines to support convoy operational planning and execution. It provides a quick reference on methods, procedures and TTP for the proper conduct of convoys. It focuses on planning and preparing convoy operations. There are important planning considerations that should be included in unit standing operation procedures (SOPs). The following subject areas assist convoy commanders and non-commissioned officers (NCOs) in the planning process.

Unit standing operating procedure (SOP):

A complete SOP facilitates planning. At company level, SOPs should conform to the next higher headquarters. At a minimum, the SOP should cover the following subjects:

- Duties of the convoy commander and other convoy control personnel

- Convoy organization
- Weapons and ammunition to be carried
- Hardening of vehicles
- Protective equipment to be worn
- Preparation of convoy vehicles; for example, information on tarpaulins, tailgates, and windshields
- Counter ambush actions
- Operations security measures
- Immediate action drills
- Actions during scheduled halts
- Maintenance and recovery of disabled vehicles
- Refueling and rest halts
- Communications
- Actions at the release point
- Reporting

Command responsibilities:

The commander of the moving unit is responsible for the mechanical condition of his vehicles. Leaders must inspect all vehicles according to appropriate TMs before departing for the mission. Convoy commanders should also ensure that:

- Additional fuel, water, and lubricants are provided for en-route requirements.
- Loads are inspected.
- Tarpaulin, troop safety straps, and end curtains are provided when required.
- Vehicles are hardened when required.
- Columns are identified with appropriate markings.
- Weapons are inspected.

Marshaling or assembly area inspection teams:

A technique for large unit movements is to establish marshaling area or assembly area inspection points. As convoys are ready to depart, they proceed to the inspection point for final checks and driver briefings. Unit-level maintenance personnel may be available to assist unit leadership in correcting last-minute minor deficiencies. Trucks with major problems will be returned to the parent unit and replaced with serviceable vehicles.

Hardening vehicles:

Cover the cargo bed of troop-carrying vehicles with at least a double interlocking layer of sandbags. Cover the cab floor of all vehicles with a double layer of sandbags under the driver's seat. Take care not to hamper pedal movement or the driver's access to them. As an additional precaution, place a heavy rubber or fiber mat over the sandbags to reduce danger from fragments such as sharpened stones, sand, and metal parts of the vehicle. This also prolongs the life of

sandbags. Sandbags may also be placed on the fuel tank, fenders, and hood. When contemplating hardening vehicles for escort and/or gun truck duty, use one escort/gun truck for every eight task vehicles. Prior approval from higher headquarters must be received before task vehicles are converted into escort/gun trucks.

Convoy identification:

Identify each column with a blue flag on the lead vehicle and a green flag on the rear vehicle. Mount flags on the left of the vehicles, either front or rear. Position flags so they do not interfere with driver vision or functional components of the vehicle. When movement is at night, the lead vehicle shows a blue light and the rear vehicle a green light. The vehicle of the convoy commander and the march unit commanders must display a white and black diagonal flag on the left front bumper. This flag is divided diagonally from the lower left corner to the upper right corner with the upper left triangle white and the lower right triangle black. Trail party vehicles carry an international orange safety flag. State and local police or MP escort vehicles do not display convoy identification flags. The convoy movement order includes a convoy clearance number (CCN) that identifies the convoy during its entire movement. The CCN is placed on both sides of each vehicle in the convoy and, if possible, on the front and back of each vehicle. It is also placed on the top of the hood of the lead and rear vehicles of each march unit.

Final preparation:

Final convoy preparation includes organizing the convoy, briefing personnel, and inspecting individual equipment and vehicles. Convoy personnel are usually briefed after the vehicles are lined up. After the convoy commander's briefing, personnel are returned to the control of the march unit commanders who give final instructions. Leaders make final inspections of loads to ensure that they are properly secured and that vehicles are ready to move.

Night Convoys

Night convoys are extremely vulnerable to ambush and sniper fire. If night convoys are required, units must be trained in techniques for night convoys, night loading and off-loading, and night refueling. Heed the following guidelines for night convoys:

- Keep night convoys small.
- Use roads that drivers know.
- Make maximum use of night-vision devices.
- Rehearse movements.
- Conduct leader reconnaissance.

Plan night moves in the same manner as daylight moves. However, night moves take longer and there is greater chance for mistakes, injury, and fratricide. When planning a night move, determine if the convoy will operate in an area that requires blackout drive. The area commander will make this decision. A harbor area is a space set aside for normal halts, traffic control, and emergency congestion relief.

Harbor areas are used to:

- Hold vehicles at both ends of a crossing or defile.
- Make changes in density, especially at first or last light.

- Contain spillovers in serious delays (likely to be caused by enemy air attack or its results).
- Allow columns to rest and carry out maintenance and decontamination.
- Allow elements to change position in column if there is a change in priorities.

Vehicle Hardening

As the nature of conflict changes, so does the threat to logistics units. War and certain other operations—especially peacekeeping or peacemaking—place renewed emphasis on convoy security and reinforce lessons learned in Vietnam. Current threats include the use of command-detonated and pressure-sensitive mines placed on, above, or along the shoulders of roads traveled by military vehicles and the ambushing of convoys and harassment with sniper fire. These methods of disrupting military operations are highly effective and cheap. Additionally these methods require limited time and labor, are easy to coordinate, and can be accomplished by an unsophisticated enemy. To counter these threats, motor transport units may be provided with security forces and supporting arms firepower. Special vehicle-hardening techniques using sandbags and other improvised material have proved successful in protecting convoy personnel, equipment, and cargo. Although effective, vehicle-hardening techniques must be tailored to fit the specific environment in which the motor transport units are operating.

Hardened vehicles:

A hardened vehicle is made less vulnerable to the effects of explosives and small arms fire by adding sandbags, armor plating, ballistic glass, and other protective devices. Hardening may make certain vehicle components and cargo less vulnerable. Its primary purpose, however, is to protect the truck's occupants. The protection afforded is significant and often means the difference between injury and death.

Sandbags:

Sandbags are effective in reducing the effects of blasts, preventing fire from reaching the driver, and providing protection from small arms fire and fragmentation. Sandbags are usually readily available and do not permanently impair the flexibility of vehicles. Sandbags can easily be added or removed from the vehicle as the situation dictates. One drawback to using sandbags is that their weight limits the vehicle's capability to haul cargo.

Experience shows that using sandbags to harden vehicle cabs for protection against mine blasts saves lives. Normally, the cabs of all vehicles subject to detonating mines are hardened. Certain cautions, however, must always be observed. Sandbags should be placed so that they:

- Do not restrict the movement of foot pedals, levers, or controls.
- Do not interfere with the normal functions performed by the driver.
- Do not restrict driver vision.

To reduce the sandblast effect when a mine is detonated near the vehicle, various materials may be placed on top of the floorboard sandbags (rubber mats, light metal plates, plywood, or scraps of runway membrane material). Wetting down the sandbags is also effective, but contributes to deterioration of the metal.

To properly prepare the vehicle cab, double-stack sandbags under the passenger seat and on the cab floor. Stack the sandbags two high under the driver's seat; in some vehicles this may not be

CENTER FOR ARMY LESSONS LEARNED

possible. Remove the tools from the basic issue item (BII) storage compartment and place them inside the bed. Place sandbags in the storage compartment to give the driver required protection. As an added precaution, place a heavy rubber or fiber mat over the sandbags. This reduces danger from fragments (stones, sand, and metal parts from the vehicle).

If the tools remain in the BII storage compartment and the vehicle detonates a mine, the tools may become secondary projectiles that can injure the driver. If sandbags cannot be placed under the passenger seat because batteries are located there, stack the sandbags on the seat. Never place sandbags directly on the batteries.

The cab of a 5-ton M923 cargo truck needs about 14 to 20 sandbags, while a 2 1/2-ton truck requires about 12 to 18 sandbags.

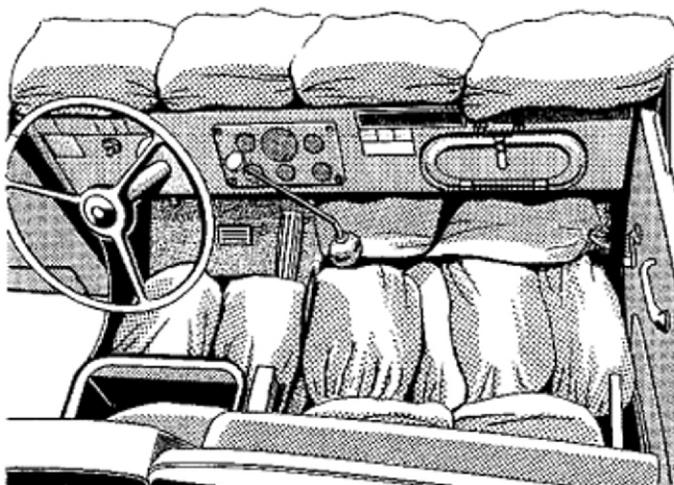


Figure 2-1: Proper Placement of Sandbags in the Cab

Cover side windows and the front windshield with wire mesh to protect personnel from rocks and grenades. The convoy commander will decide whether to have windshields removed, lowered, or left in place. If the windshield interferes with the use of weapons and blackout operations and must be lowered, place a single layer of sandbags under the windshield, lower the windshield onto the bags, place a second layer of sandbags over the windshield, and then cover both with canvas. Placing sandbags under the windshield ensures that:

- Constant vibrations of the vehicle do not damage the windshield
- Sand is not blown into the driver's face
- Glass will not shatter and injure the driver and passenger

Leaving the windshield in place protects against heavy and driving rain, incoming grenades, and decapitation of personnel from wire stretched across the road.

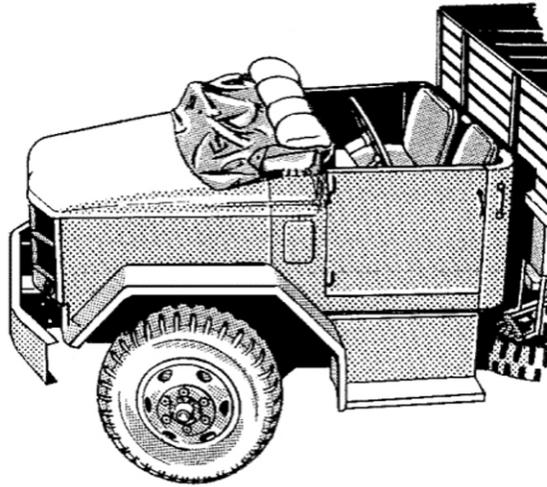


Figure 2-2: Proper Placement of Sandbags under the Windshield. Cargo Bed

Depending on the type of load, the cargo bed may or may not be hardened. For example, if troops are being transported, the bed needs to be hardened with a double layer of sandbags. The bags also need to be properly fitted to the contours of the vehicle. Stack the bags five high around the sides of the vehicle to add protection. To hold the sandbags in place, construct a support structure and place it inside the bed of the vehicle.

This structure can be made by using four-by-fours on the corners and two-by-sixes in between.

Caution must be taken to ensure that the sandbags do not exceed the allowable weight of the vehicle bed. Double-stacking the sandbags increases the possibility of exceeding the vehicle's payload capacity. The mission, coupled with the enemy threat, must determine the extent of hardening (single- or double-layer sandbags). The bottom line is to ensure soldier safety.

It takes about 226 sandbags (dry, weighing about 40 pounds each) to prepare the bed of a 5-ton, M923 cargo truck. Distribution is as follows: 86 on the floor bed (single layer); 5 high on each side (50 per side = 100 bags); 20 in the front; and 20 in the rear of the bed.

Protective plating around the fuel tank will lessen the damage to the fuel tank. It will also help to ensure that the fuel tank is not pierced, thus immobilizing the vehicle. This protective measure is especially critical when a vehicle is caught in the kill zone of an ambush. An alternative solution to this problem is to hook up a 5-gallon can of fuel in a safe location for use as an auxiliary fuel tank. This will allow the vehicle to travel a safe distance outside the kill zone if all the fuel is drained from a damaged fuel tank.

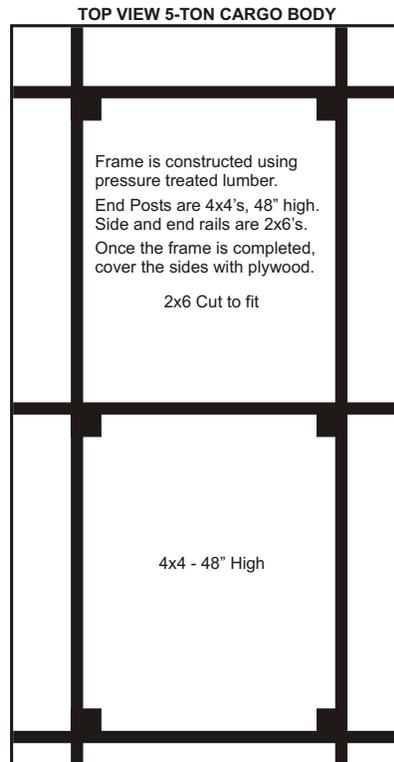


Figure 2-3: Support Structure for the Bed of the Truck

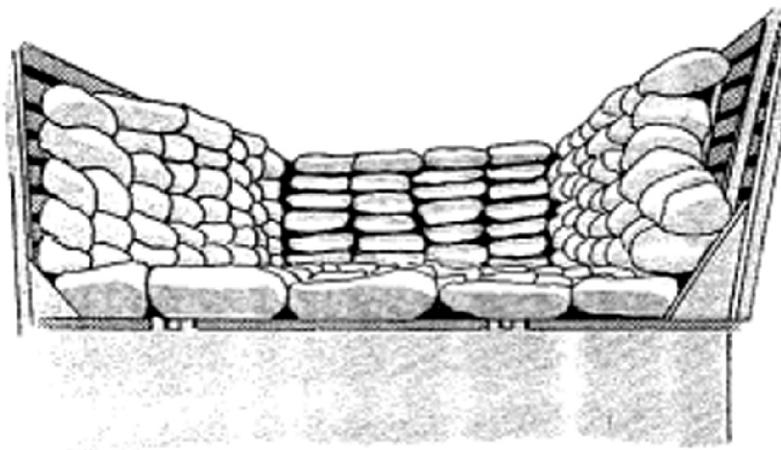


Figure 2-4: Sandbagged 5-ton M923 Cargo Truck

A 5-ton M923 cargo truck requires about five sandbags to provide top protection. Consider placing protective plating around the sides and bottom of the fuel tank to increase protection.

Older vehicles in the Army inventory may still be operating on MOGAS. If a tank filled with MOGAS is ruptured, the fuel may ignite and seriously burn operating personnel.

When putting sandbags or protective plating on or around the fuel tank, ensure that the hanger straps of the fuel tank do not crack or break.

Gun trucks:

Logistical convoys cannot always depend on military police support or added firepower. To provide more firepower for a convoy, units developed the gun truck. The purposes of a hardened gun truck are to:

- Provide a base of fire.
- Help counter enemy attacks.
- Increase survivability of the convoy.

The gun truck is equipped with a crew-served weapons system, preferably in a protective position. In Vietnam, this principle worked well and provided convoys a means of self-defense.

Deploy the gun truck in the convoy where it can best provide the needed firepower. If adequate communications assets are available, they should be located with the gun truck and the convoy commander. This enables the convoy commander to call the gun truck forward when needed. (A predesignated signal is required to bring the gun truck forward and inform the crew-served weapon system personnel of the enemy location.) If communications assets are not adequate, pyrotechnics may be used to signal the gun truck to move forward.

The gun truck should not be located right on top of the enemy location. The crew-served weapons on the gun truck can cover a significant distance. Therefore, the vehicle should be situated where it has a clear field of fire to engage the enemy with the maximum effective range of the weapon. If necessary, and if available, multiple gun trucks can be used. When using multiple gun trucks in a convoy, overlapping fields of fire greatly increases the convoy's chance of survival.

Based on availability, types of weapon systems, and size of the convoy, the placement and number of gun trucks may vary. With company-size and larger convoys, a minimum of two gun trucks should be used to provide overlapping fire. One gun truck for every eight vehicles in the convoy is recommended.

Consider using the MK19 or M203 to penetrate prepared defensive positions since small arms fire may not be capable of destroying enemy positions.

Ballistic test results:

It is critical that the most protective material available be used to harden a vehicle. Ballistic tests show that sand is about twice as effective as clay in hardening vehicles. At a maximum velocity of 3,250 feet per second at a range of zero feet, it takes about .6 feet of sand and 1.2 feet of clay to stop a 5.56-mm round. At a maximum velocity of 2,750 feet per second, it takes about .9 feet of sand or 1.7 feet of clay to stop a 7.62-mm round. Finally, at the maximum velocity, it takes about 1.4 feet of sand or 2.6 feet of clay to stop a 50-caliber round. Using the most protective

substance could mean the difference between life and death for our most precious resource—our soldiers.

Camouflage and Concealment

Camouflage and concealment techniques can be used to make it more difficult for the enemy to spot the convoy. The type of cargo being transported can be disguised or concealed by a tarpaulin. Other effective measures include the following:

- Camouflaging or covering shiny surfaces before convoy departure.
- Painting vehicles in a pattern to blend in with the terrain and break the outline.
- Training operators to look for other means of concealment to break the outline of the vehicle.
- Covering vehicle bumper markings. The vehicle bumper markings can provide a great deal of intelligence information to the enemy.

Mines and Booby Traps

Forces engaging in ambushes frequently use mines and booby traps. Command-detonated mines are often used to initiate an ambush. Mines may also be planted along the shoulder of the road to harass and interdict. A booby trap system may be used against personnel and equipment. Convoys have employed the following guidelines to effectively limit damage from mines:

- Track the vehicle in front.
- Avoid driving on the shoulder of the road.
- Whenever possible, do not run over foreign objects on the road.
- Avoid potholes and fresh earth on the road.
- Watch local national traffic and the reactions of people on foot (they will often give away the location of any mines or booby traps).
- When possible, arrange for the engineers to sweep the road ahead before the convoy moves over it.
- Use a 2 1/2-ton or larger truck as the lead vehicle instead of a HMMWV. Hard vehicles, such as tanks, are useful in exploding small mines in front of the convoy.
- Harden vehicles.
- Use water in vehicle tires when there is a threat of mines exploding under the tires.
- Increase ground clearance distance between the point of explosion and the vehicle, if possible.
- Use the following personal safety measures:
 - Wear protective equipment.
 - Use safety belts.
 - Ensure seat belts are tight; otherwise, whiplash may occur during an explosion. Also, fasten the seat belt as low as possible on the stomach.
 - Use correct posture. Keep the backbone straight and supported by a backrest (to better absorb shock) and place feet flat on the floor.

- Slow the vehicle's speed to reduce the potential of accidents. Adjust the speed based on the situation.
- Disperse vehicles and maintain intervals.

In Somalia the Army experienced command-detonated mines of 30, 50, and 60 pounds. These devices were placed in one of the many potholes in the road. To avoid such obstacles and/or minimize damage, implement the above techniques. Currently, the ACMs employ similar methods using IEDs with a greater potential for destruction.

Some indicators that have proven effective in identifying the location of potential mines are:

- Damaged vehicles
- Signs of digging, holes in the road, potholes, concrete removal, or puddles
- Boxes along the roadside
- Wires on the road surface
- Evidence of vegetation disturbance
- Disturbances in previous tire tracks
- Differences in plant growth, such as wilting or dead foliage
- Irregularities in color or texture of the ground
- Signs warning local populace

The enemy is likely to place mines on:

- Frequently used roadways leading to and from construction sites
- Brush and other traffic obstructions placed on roadways
- Bridge bypasses
- Obvious turnarounds and shoulders.

Convoy Planning Tools

All too often, convoys are treated as administrative moves instead of the combat operations they are. **THERE IS NO SUCH THING AS AN ADMINISTRATIVE MOVE IN A COMBAT ZONE!** Tactical convoys are combat operations and must be treated as such. They require additional planning and coordination beyond normal line-haul operation. The probability for running into enemy contact is greater and, therefore, more detailed preparation is necessary. What follows is a framework to assist with the planning and execution of a tactical convoy. It is not an all-inclusive list, but it will give the convoy commander a checklist to successfully complete the mission. Appendices A, B, C, and D contain convoy checklists.

Convoy battle drills:

(**Note:** Dismounting vehicles may NOT be an option - beware of mines)

*1. March commander supervises reaction to sniper fire.

- Locates approximate location of sniper incident on map from march element reports.
- Identifies whether area is a free fire zone or restricted fire zone.

- Authorizes return fire only if sniper(s) are located.
 - Directs march elements to increase march speed and interval between vehicles until they have cleared the area.
 - Provides instructions to follow-on march elements.
 - Forwards incident report to higher HQ staff element.
2. Unit takes action against sniper fire.
- Reports sniper fire to march commander immediately upon contact.
 - Returns fire immediately that kills snipers or suppresses their fire (designated personnel only).
 - Increases column rate of march and vehicle interval.
- *3. March commander supervises defense against ambush, road blocked, or road not blocked.
- Identifies location of ambush site on map with map overlay.
 - Directs march elements under attack to employ correct protective actions as prescribed in higher HQ movement order and tactical standing operating procedures (TSOP).
 - Provides instructions on halt points and security requirements to all march elements.
 - Forwards initial incident report to higher HQ staff element.
 - Directs hardened vehicles with automatic fire capability into position to lay down concentrated fire on threat position(s).
 - Directs the march elements ahead and march element following to organize security teams to attack flanks of threat ambush party.
 - Maintains constant communications with all march elements engaging threat to immediately make adjustments to tactical situation.
 - Forwards subsequent SITREP reports to higher HQ staff element as situation changes.
 - Requests immediate CAS and/or indirect fire support from higher HQ staff element.
 - Directs use of pyrotechnics for signaling or marking areas.
 - Develops contingency plans to displace elements not under attack and withdraw elements under attack.
4. Unit defends against ground ambush (road not blocked).
- Reports ambush to march commander immediately upon contact.
 - Identifies threat location(s).
 - Returns fire immediately that kills threat and suppresses their fire (non-driving personnel).
 - Stops vehicles (not in kill zone).
 - Increases rate of march until out of kill zone (vehicles in kill zone).
 - Keeps roadway clear by pushing disabled vehicles aside.
 - Organizes security element(s) of soldiers not in kill zone (senior member present).

- Directs fire and maneuver of security elements to allow remaining vehicles to pass through kill zone (senior member present).
- Forwards SITREP to march commander.

5. Unit defends against ground attack (road blocked).

- Reports ambush to march commander immediately upon contact.
- Dismounts vehicles on opposite side of direction of ambush.
- Returns fire immediately which kills threat or suppresses their fire (soldiers in kill zone).
- Takes up firing positions while awaiting orders (soldiers not in kill zone).
- Organizes security element(s) of soldiers not in kill zone (senior member present).
- Directs fire and maneuver of security elements to allow removal of roadblock (senior member present).
- Forwards SITREP to march commander.

*6. March commander requests indirect fire support.

- Requests fire support IAW instructions in the higher HQ movement order or TSOP.
- Identifies grid direction to threat location.
- Identifies threat target location using grid coordinates or shift from a known point.
- Transmits call for fire in proper sequence.
- Transmits fire adjustments information in proper sequence to the fire support element, if an “Adjust” fire mission.
- Transmits “end of mission” and surveillance report if fire was sufficient.

*7. March commander requests CAS.

- Verifies threat position(s).
- Requests CAS by means prescribed in higher HQ movement order.
- Supervises preparation of unit personnel for friendly strike.
- Directs marking of friendly unit location(s) with prescribed colored smoke.
- Communicates strike effectiveness to higher HQ staff element.

8. Unit employs passive defense measures against air attack.

- Provides the prescribed signal to alert column.
- Staggers vehicles to avoid linear patterns.
- Drives vehicle in shadows or wood line.
- Assumes firing positions.
- Fires only upon command.
- Reports all aircraft actions to higher HQ staff element.

9. Unit employs active defense measures against air attack.

- Employs the prescribed signal to alert march elements.
- Identifies threat aircraft visually.
- Disperses vehicles to concealed locations.
- Assumes firing positions.
- Prepares crew-served weapons for firing.
- Fires weapons at attacking aircraft only if fired upon or on command.

*10. March commander supervises reorganization after attack.

- Identifies status of all personnel, equipment, and cargo through march element reports.
- Coordinates requirements within march elements for load transfer, vehicle repairs, mortuary affairs, and medical transportation.
- Requests emergency destruction authorization from higher HQ staff element for unrepairable items.
- Forwards SITREP to higher HQ staff element.

11. Unit reorganizes after the attack.

- Maintains 360-degree surveillance.
- Treats casualties.
- Reports casualties.
- Requests air ambulance support through march commander.
- Re-establishes chain of command, if necessary.
- Secures landing zone, if air ambulance is required.
- Transports casualties.
- Performs mortuary affairs functions.
- Assesses damage to vehicles and cargo to determine operability and reparability.
- Performs BDAR for recoverable vehicles.
- Removes critical items from unrecoverable vehicles.
- Requests emergency destruction of vehicles and non-medical equipment from march commander.
- Forwards SITREP to march commander.
- Reorganizes march elements.
- Resumes march.

NOTE * Indicates a leader task

Tactics, Techniques, and Procedures

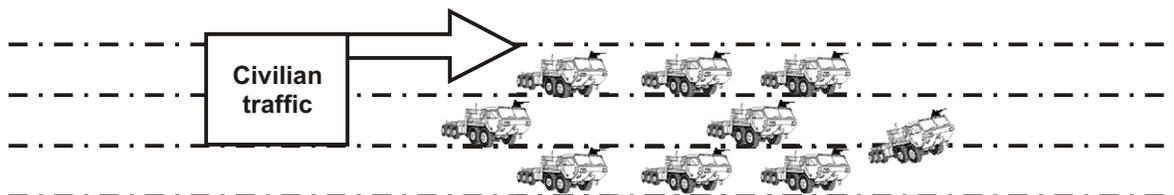
Respond to IED:

Actions Upon Identifying an IED or a possible IED:

- Halt convoy 200-300 meters from IED or possible IED
- 360 degree security of convoy
- Confirm IED or possible IED
- Send SALUTE report to higher to request EOD support and any additional Gunslinger support to help secure area
- Secure area around IED until EOD can assess situation
 - Confirm that there are not other IEDs along the road (make sure this one is not a decoy)
 - Stop/redirect traffic on both sides of the road
 - Look for wires running from IED to an observer
 - Look for someone who may be over watching IED
 - -Keep soldiers and civilians away from IED
 - Take pictures (if possible)
 - DO NOT TOUCH OR GO NEAR IED OR POSSIBLE IED. WAIT FOR EOD!
- TOC will notify EOD
- TOC will notify ALOC to be prepared to escort EOD to IED site, two vehicles and EOD (three and EOD during limited visibility)
- Maintain security of site until EOD is on site

Maintain communications with TOC at all times

Rally points:

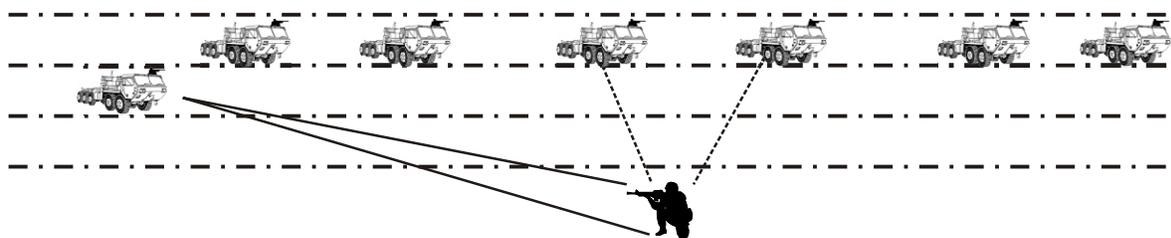


CENTER FOR ARMY LESSONS LEARNED

1. Occupation of rally point is necessary to conduct consolidation and reorganization. It is critical that convoy be secured and tasks conducted as quickly as possible. Rally points will always be conducted following contact unless directed otherwise.
2. Primary signal is communication; alternate signal is hand-held smoke (day) and star cluster (night). Colors will be specified in convoy brief based on available pyrotechnics.
3. Rally point “forward” will be located two miles in direction of movement; rally point “rear” will be located two miles to rear of movement or as METT-T dictates. Rally point should be in an open area with maximum observation in all directions and not located near built-up areas.
4. Vehicles will position in a box formation. If possible, side of the road will be used if conditions are appropriate and safe for all vehicles. A command and control vehicle will be positioned inside safe area.
5. Gun trucks will immediately position themselves to see beyond the range of enemy small arms and RPGs and establish convoy security. Gun trucks will position themselves at 12 and 6 o’clock in convoy box formation. In restricted terrain, gun trucks will conduct roving patrols to assist in maintaining security. Gun trucks’ actions must be mutually supporting with convoy elements.
6. Drivers and passengers dismount and establish perimeter security using safe side of vehicles for cover.
7. If mileage places rally point in a built-up area, convoy will continue in direction of movement until beyond built-up area.
8. Once security is established, leaders will immediately conduct casualty treatment and consolidation and reorganization.

React to attack:

(Convoy continues to move while receiving weapons fire, RPG, IED and/or indirect fires)



1. Continuously observe sectors of scan (driver: 9 to 1 clock position; TC: 11 to 3 clock position).

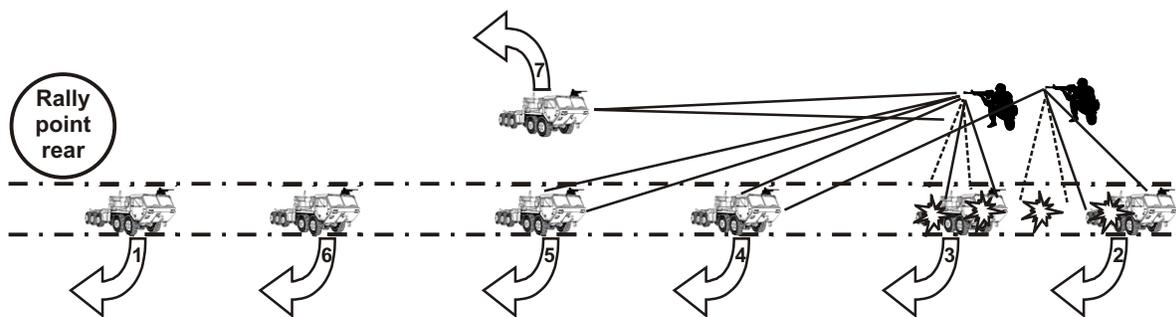
2. Place suppressive fire on enemy using weapon engagement techniques and proceed through contact zone, increasing speed and interval, and taking caution not to bunch up.
3. Activate vehicle turn signal to indicate direction of contact (primary).
4. Report contact on internal communications, identifying truck number, type of contact, and clock direction (alternate).
5. Gun trucks continue to maintain front and rear security of convoy as convoy continues movement through kill zone. Gun trucks will not maneuver to support-by-fire position if convoy is continuing movement through kill zone. Fire on the move and maintain forward momentum. Gun trucks take care to alternate reloading procedures and use supporting weapons in order to not have a lull in suppressive fires. They will shift fires to engage additional targets and maintain communications with convoy commander throughout contact. Gun truck repositions to rear as convoy passes through contact zone.
6. PL/CC/SC submits SALUTE report to higher.
7. Convoy will proceed to rally point “forward.”

Indirect fire concerns: Use an alternate route if it is determined that an MSR is under enemy observation.

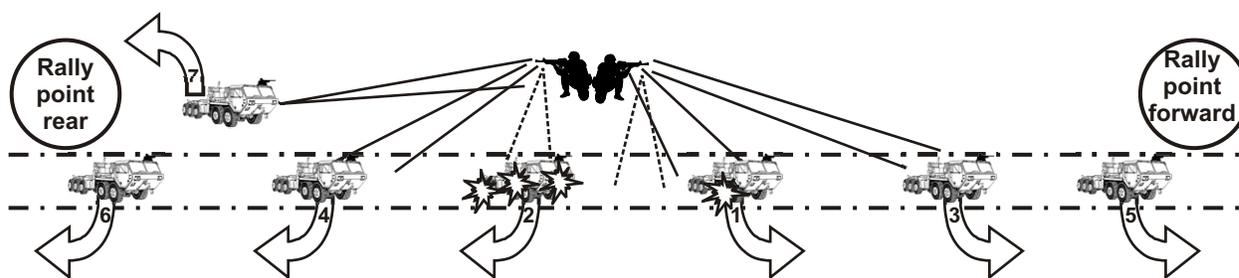
Casualty concerns: In event of a casualty, vehicle with casualty will signal using four-way flashers and, if possible, report via communication.

Break contact:

1. PL/CC/SC determines convoy cannot gain fire superiority, and decision has been made to break contact.
2. PL/CC/SC designates that either rally point “rear” or “forward” will be used. If necessary, both rally points may be used. Communication systems and appropriate pyrotechnic signals will be used to communicate “**Break Contact**” and “**Rally Point.**”
3. Personnel will deploy obscuration measures if available. Using cover and concealment, aid and litter teams will evacuate all casualties under support of gun truck and other protective fires.
4. Personnel maintain position and suppression in contact zone and assist aid and litter teams.
5. Disabled vehicles will be abandoned or destroyed as directed by leaders. (Thermite or explosives)



6. Vehicles will displace either backwards or forward through convoy lines under control of leaders. Most forward vehicle in contact zone moves first; next most forward vehicle moves second. Vehicles will continue to displace. As vehicles displace, gun truck repositions as necessary until contact is broken.



7. If break contact occurs with vehicles on both sides of kill zone, displacement of vehicles will occur using an alternating displacement technique.

8. Upon occupation of rally point, leaders will immediately position vehicles and security and conduct consolidation and reorganization.

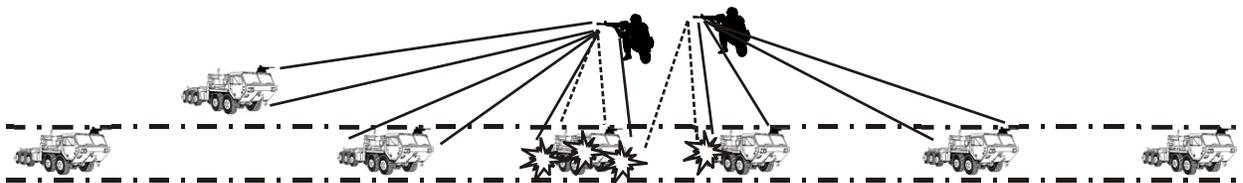
9. If convoy vehicles get separated when not in contact with enemy, personnel and vehicles stay together and move to closest rally point or checkpoint.

Convoy forced to stop:

(Convoy continues to move while receiving weapons fire, RPG, IED, and/or indirect fires)



1. Vehicles forced to stop. Activate vehicle turn signal to indicate direction of contact.
2. Vehicles/personnel not in direct contact report on internal communication, identifying truck number, type of contact, and clock direction.
3. Personnel on vehicles forced to stop dismount on non-contact side, assume covered positions, and provide initial bases of fire.
4. Entire convoy halts. Personnel will dismount vehicles on non-contact side and provide additional bases of fire on enemy if in range. Vehicles not in contact will be repositioned to provide additional bases of fire or used to provide convoy 360-degree security. M16s should be on semi-automatic to conserve ammunition.
5. PL/CC/SC will move to better assess situation and position gun trucks to best suppress enemy while remaining outside effective range of enemy weapons.

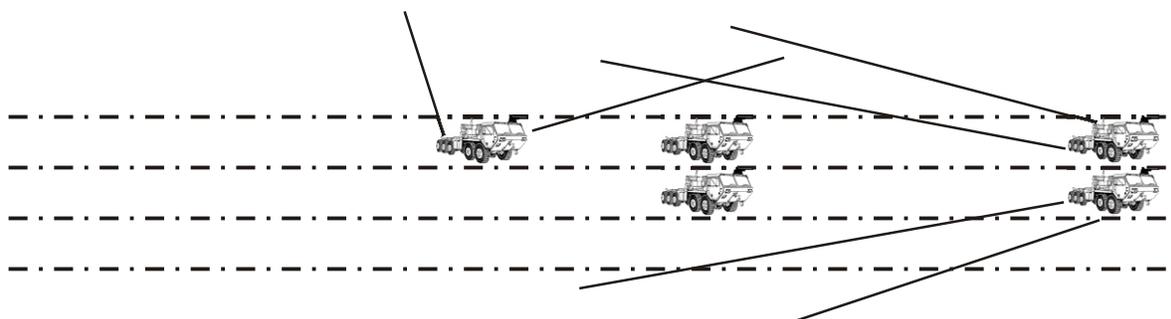


6. Once PL/CC/SC determines convoy has either gained fire superiority or defeated enemy contact, recovery/CASEVAC operations (Battle Drill 5) will begin. Recovery operations are

conducted, if possible. Pre-determined destruction criteria should be established during planning to expedite operations when recovery is not possible.

7. If PL/CC/SC determines convoy cannot gain fire superiority, leader will then conduct break contact procedures (Battle Drill 6).

Recovery/CASEVAC operations:



1. Once leader determines that area in vicinity of disabled vehicles is secure and positions the gun truck in a good overwatch position (remaining at a standoff distance if possible), recovery/CASEVAC operations will begin.

2. CASEVAC:

- a. Aid and litter team will position on safe side of vehicle and extract casualties and personnel.
- b. Treatment of casualties, except for emergency treatment to prevent loss of life, will occur once casualties are safely removed from kill zone.

3. Vehicle recovery procedures:

- a. Recovery team will position on safe side of disabled vehicle.
- b. TC will dismount and assess disabled vehicle.
- c. If determined vehicle can be safely recovered, TC will guide recovery vehicle into position and conduct a hasty hook-up. TC will operate disabled vehicle, if necessary.
- d. Upon exiting contact area, complete and correct hook-up procedures will occur.
- e. If assessment results in outside support necessary for recovery, leader will contact higher for guidance.

4. Once recovery operations are complete, team will displace and conduct link-up with convoy at rally point.

5. Disabled vehicle(s) will be abandoned or destroyed as directed by leaders. (Thermite or explosives)

SECTION VII: UAV SUPPORT OPERATIONS

A UAV is controlled from remote locations via radio frequency (RF). It provides near-real time video of the battlefield transmitted to a controlling shelter and remote video terminals (RVT). The UAV provides the commander a platform to collect near-real time video. Lesson learned from units returning from OEF indicate that UAV video is more effective when used to confirm intelligence collected by a different collection platform.

With the advent of newer technology and with the demonstrated performance of the UAVs, the current classes or combination of these type vehicles are called the tactical UAV, followed by the endurance category.

The unmanned aerial vehicle (UAV) contributes significantly to battlefield awareness. UAV-provided information has improved the quality and timeliness of battlefield intelligence, keeping decision-makers better informed. While the primary mission of the UAV remains reconnaissance, surveillance, and target acquisition (RSTA), the UAV can be employed in support of intelligence preparation of the battlefield (IPB), situation development, battle management, battle damage assessment (BDA), rear area security, and command and control (C2). UAVs have also been successfully used as munitions delivery platforms. UAVs can perform many missions, which would normally be considered unacceptable or unsafe for manned aircraft. That is not to say that the UAV is an asset to be expended needlessly. METT-TC will dictate when such attrition should be considered. Even then, every effort should be made to preserve the UAV because of its value as “eyes” over the battlefield.

Several autonomous UAVs have been fielded which can be given GPS-based or INS-based navigational parameters and then are left to loiter and collect SIGINT, COMINT, photography, or real-time television images, and flash the data or images back to troop commanders.

The UAV can support the commander in day or night operations but is limited by adverse weather. According to the tactical concept of operations, the UAV will fly 12 hours per day, with a surge capability of up to 72 continuous hours, if authorized by the commander. Manning will also affect the surge capability. However, surge operations come at a cost; the UAV is down for maintenance for 72 hours following a surge operation.

The UAV is capable of conducting day and night operations including:

- Route, area, and zone reconnaissance
- Surveillance of named areas of interest (NAI)
- Support combat search and rescue (CSAR)
- Target acquisition
- Support BDA
- Rear area security
- Situation development
- Support IPB
- Communications relay
- Command and control.

Weather Limitations

The weather must be considered in developing the collection plan. If any of the following conditions are present, the mission will not launch:

- Ceilings of 6,000 feet or less will prevent collection during mission.
- Headwind of 35 knots, tailwind of 3 knots, and crosswind of 20 knots
- Winds aloft of greater than 50 knots
- Lightning within 10 nautical miles
- Ice

Command and Control

C² of the UAV company is strictly based on its location in the area of operations. In the general support role, the G2 determines how the UAV will be used based on the commander's PIR. When the shelter is located at the brigade TOC, the controlling element is the brigade.

Lags in UAV targeting is a common occurrence. Whether the delay is a lack of communication, lack of situational awareness, or a lag in the dissemination of the intelligence, the fact remains that good intelligence is not being used to its fullest potential. The brigade requires imagery analysts to allow instant analysis of UAV imagery. Better imagery training for other imagery military occupational specialties (MOSs) and adding the identification to their job descriptions would increase the possibility that someone would be available to exploit imagery at the brigade level. Better communications between brigade, fire support, the UAV, and whoever is exploiting the imagery will further decrease the lag time.

SECTION VIII: OPERATIONS AGAINST CAVE COMPLEXES

The use of caves as hiding places, caches for food, munitions and weapons, headquarters complexes, and protection against air strikes and artillery fire has been characteristic of the nature of the war in Afghanistan and other desert environments. An extensive cave system containing conference, storage, and hiding rooms, as well as interconnected fighting points, has frequently been encountered.



These complexes present a formidable and dangerous obstacle to current operations, which must be dealt with in a systematic, careful, and professional manner. Once the cave complex is cleared, it is usually destroyed (or at least the entrance is destroyed) to deny future use by the anti-coalition members (ACM). Coalition members often receive aerial support from American B-1 bombers (2,000-pound bombs) and F-16 fighters (500-pound bombs). AC-130 gunships and Apache AH-64 helicopters strafe enemy positions with rocket and cannon fire in support of cave clearing operations.

Cave Techniques

- A trained cave exploitation and denial team is essential to the expeditious and thorough exploitation and denial of enemy caves. Untrained personnel may miss hidden cave entrances and caches, take unnecessary casualties from concealed mines and booby traps, and may not adequately deny the cave to future enemy use.
- Each unit should designate cave teams. Cave teams should be trained, equipped, and maintained in a ready status to provide immediate expert assistance when caves are discovered.
- Careful mapping of a cave complex may reveal other hidden entrances as well as the location of adjacent cave complexes and underground defensive systems.
- Two- and three-man teams should enter caves for mutual support.
- Claustrophobia and panic could well cause the failure of the team's mission or the death of its members.

- Constant communication between the cave and the surface is essential to facilitate cave mapping and exploitation.

Cave Exploitation and Destruction

- The area in the immediate vicinity of the cave is secured and defended by a 360-degree perimeter to protect the cave team.
- The entrance to the cave is carefully examined for mines and booby traps.
- Two members of the team enter the cave with wire communications to the surface.
- The team works its way through the cave, probing with bayonets for booby traps and mines and looking for hidden entrances, food, arms caches, and air vents. As the team moves through the cave, compass headings and distances traversed are called to the surface. A team member at the surface maps the cave as exploitation progresses.
- Captured arms and intelligence documents are secured and retrieved for destruction or analysis.
- Upon completion of exploitation, cratering charges or other available explosives are placed at all known cave entrances to seal each and prevent reuse by the enemy. Caves are frequently outstanding sources of intelligence and should, therefore, be exploited to the maximum extent practicable.
- Since cave complexes are carefully concealed and camouflaged, search and destroy operations must provide adequate time for a thorough search of the area to locate all caves. Complete exploitation and destruction of cave complexes is very time consuming, and operational plans must be made accordingly to ensure success.
- The presence of a cave complex within or near an area of operations poses a continuing threat to all personnel in the area. No area containing cave complexes should ever be considered completely cleared.
- In some areas the combat situation will permit a hasty search for hidden tunnel entrances, but either lack of time or enemy occupation of the tunnel will not permit searches by a tunnel team.

Dangers

Dangers inherent in cave operations fall generally into the following categories and should be taken into account by all personnel connected with these operations:

- Presence of mines and booby traps in the entrance/exit area.
- Presence of small but dangerous concentrations of carbon monoxide produced by burning-type smoke grenades after caves are smoked. (**Note:** Protective masks will prevent inhalation of smoke particles, but will not protect against carbon monoxide.)
- Possible shortage of oxygen as in any confined or poorly ventilated space.
- Enemy still in the cave who pose a danger to friendly personnel both above and below ground. (**Note:** In some instances, dogs can successfully detect enemy hiding in caves).

SECTION IX: OPERATIONS IN A HIGH-ALTITUDE ENVIRONMENT

Soldiers deploying to Afghanistan must understand the simple rules of soldiering at high altitudes including some significant health problems that they otherwise may never encounter. High-altitude operations increase energy requirements by as much as 50 percent and, coupled

with cold temperatures and increased physical activity, have the potential of making the mission secondary to just surviving. The increase in physical activity is only offset by thorough acclimatization, conditioning, special skills and training, and using equipment designed for the conditions.

High-Altitude Sickness

Acute mountain sickness (AMS) may begin at 8,000 feet above sea level. The following symptoms are typically linked to a high rate of ascent; however, many factors influence who becomes ill and who does not:

- Headache and possible dizziness
- Sleep disturbance
- Fatigue

A more serious high altitude sickness, hypoxia, has with life-threatening implications and the potential for disrupting military operations. Hypoxia occurs when the tissues of the body are starved for oxygen. The body reacts to this loss of oxygen by increased breathing to get more air. The physical activity of the body increases the heart rate and can cloud judgment. Symptoms of hypoxia include dizziness, giddiness, a tingling sensation, euphoria, blurred and/or tunnel vision, lack of muscle coordination, and slow reaction time. The condition affects every soldier differently depending on the soldier's age, general health, physical conditioning, and training.

The results of hypoxia can have minimal effect on an individual at 10,000 feet, but effects increase as the individual increases altitude. Loss of consciousness and possible death can occur above 35,000 feet. Operations above this level require an oxygen supply.

High-Altitude Weight Loss

Weight loss is a characteristic of operations at high altitude. The average weight loss for a special forces team living on Pakistani rations and working with the high-altitude mountain school in 1994 was 20 to 25 pounds. Working at high altitudes requires more energy and soldiers will lose weight, but weight loss must be controlled so it does not become incapacitating. Weight loss leads to fatigue, loss of strength, and psychological changes, such as decreased mental capacity, alertness, and low morale. All of these conditions can contribute to accidents and a failure to accomplish the mission.

Soldiers should eat and drink the following while operating at high-altitudes:

- High-complex carbohydrates
- Portions of the complete ration verses one item or the other
- At least one hot meal a day, using whatever heat source is available (i.e., chemical heat packs in MREs)
- A variety of foods and nutritious snacks
- Four to six (4-6) quarts of non-caffeinated beverages a day

Soldiers should NOT do the following while operating at high-altitudes:

- Skip meals, although you will not feel like eating; consume a little of everything in your ration.

- Eat high fat snacks or fatty foods or consume alcohol of any type.
- Force yourself to eat. This will result in vomiting and make the situation much more hazardous.
- Drink unpurified water or melted snow that is not properly treated.
- Restrict water intake to save it for later or attempt to avoid urinating.

Altitude sickness in most forms is preventable. Leaders must take precautions to protect their soldiers at moderate altitudes to avoid illness. Successful strategies to prevent altitude sickness are simple and inexpensive: spend a night at an intermediate altitude before moving higher, take it easy one day at each succeeding altitude level, drink plenty of fluids, eat a full diet, and avoid all alcohol.

Tactical Considerations During High-Altitude Operations

Initial observations received from Afghanistan provide some interesting interpretations as to how soldiers are performing in the theater. In most cases, these observations include soldiers that have been in training already for mountainous operations, either as conventional infantry or SOF. The real test of long-term operations may depend on follow-on light infantry forces that have to this point rarely trained for this type of operation. There is still time to prepare soldiers for the rigor of high-altitude operations, but the training and equipping of these soldiers must begin now. Doctrine, organizations, training, materiel, leadership and education, personnel, and facilities (DOTMLPF) provide the basis for examining these initial observations and how the Army can begin reacting to the needs of soldiers in theater. These operations are unique. They were made in a specified region of the world where many of these conditions may never be duplicated. The observations are relatively concise; many offer simple and easy solutions to a problem. A few others will take some considerable effort, time, and resources to resolve.

SECTION X: OPERATIONS IN COLD WEATHER

To win in cold weather, soldiers must also overcome an additional enemy: the extreme and unforgiving cold weather environment. This means preventing and defeating cold injuries, such as hypothermia and frostbite. If allowed to develop, cold injuries become debilitating (or possibly fatal, in the case of hypothermia) to the soldier and threaten the unit's ability to defeat an enemy force in cold weather operations.

The four essential requirements for survival in cold environments are:

- Warmth
- Food
- Water
- Shelter

Keeping the soldier warm and nourished are essential factors in preventing cold injuries and sustaining the combat power of the fighting force. Shelter is particularly important because without it, it is difficult to provide warmth and nutrition to soldiers in a cold environment.

Heat Production

The body's three main physiological means for producing heat are metabolism, exercise, and shivering.

Metabolism:

Biochemical reactions which keep us alive produce heat as a by-product. Our basal metabolic rate is a constant internal furnace. However, when we are exposed to cold, wintry conditions for long periods, metabolism by itself does not produce enough heat to satisfy our body's entire heat requirements.

Exercise:

Exercise is an important method of heat production. Muscles, which make up 50 percent of our body weight, produce most of our heat during work. Short bursts of hard, physical effort generate tremendous amounts of heat. Moderate levels of exercise can be sustained for relatively longer periods. There are limitations, however. Physical conditioning, strength, stamina, and fuel in the form of food and water are necessary to sustain activity.

Shivering:

Shivering is a random, inefficient quivering of our muscles. It produces heat at a rate five times greater than our basal metabolic rate. It is our first defense against cold. Shivering occurs when temperature receptors in the skin and brain sense a decrease in body temperature and trigger the shivering response. As with work and exercise, the price of shivering is fuel. How long and how effectively we shiver is limited by the amount of carbohydrates stored in muscles and by the amount of water and oxygen available.

Heat Loss

There are five mechanisms by which our bodies lose heat. The primary means of heat loss is through the skin.

Conduction is the transfer of heat through direct contact between a relatively hot and a relatively cold object. Heat moves from the warmer to the colder object. We lose heat when we lie on snow, ice, and cold or wet frozen ground (foxholes) or sit or lean against floors and bulkheads in unheated interiors of armored, mechanized, or wheeled vehicles.

Convection is the transfer of heat by the circulation or movement of relatively colder ambient environment (air or water) around the body.

Evaporation is heat loss in the form of vapor. Heat is necessary to the evaporation of perspiration from the skin's surface. Evaporative heat loss accounts for 20 percent of the body's normal total heat loss. When we become overheated through physical exertion, evaporation becomes our major mechanism for heat loss. Sweating accounts for roughly two thirds of our evaporative heat loss; the remaining one third is lost through breathing.

Respiration also cools the body. As a soldier breathes in cold dry air, it is warmed and humidified in the lungs. As it is exhaled, as much as 25 percent of the body's heat can be lost. Placing a wool scarf or mask over the mouth and nose warms inhaled air and assists in keeping the body warm.

Radiation is the emission of heat energy in the form of particles or waves. Energy is emitted by one body, transmitted through an intervening medium, and absorbed by another body. Infrared, or heat radiation, is transferred from a relatively hot to a relatively cold object. In winter, we lose heat to the environment through radiation. We can receive radiative heat input from fires, from the sun, or from reflection off snow, water, or light-colored rocks.

When exposed to the environment, the skin serves as a radiator. Unlike the rest of the body, the blood vessels in the head do not constrict and reduce the blood supply flowing to the scalp. The head is, therefore, an excellent radiator of heat, eliminating from 35 to 50 percent of our total heat production. In cold weather operations, dry insulation, especially on the head, is essential in minimizing heat loss.

The right approach to winning in the winter keeps soldiers healthy and focused on the mission. There are four basic rules to remember:

- **Keep soldiers in shape.** Cold weather clothing is heavy and presents an additional burden to a soldier's normal equipment. The additional equipment, coupled with the difficulty of trudging through the snow, causes soldiers to expend extra energy. The importance of maintaining a high level of physical conditioning cannot be overemphasized.
- **Eat to keep fit.** Regular, satisfying hot food is essential for sustained performance. Even if soldiers are not hungry, they must eat or they will lose physical conditioning. They will also lower their threshold of resistance to cold stress because their bodies will not have the fuel it needs to sustain heat production and protect against lowering of the core body temperature.
- **Drink plenty of water.** Normally, in cold climates, soldiers drink only when they are thirsty. This will not give them the water needed to avoid dehydration. Drinking plenty of water avoids dehydration and the fatigue that comes with it. Irritability is often an early sign of dehydration. Soldiers should not eat snow as a water substitute; the moisture content of snow is relatively low, and eating it will lower the body's core temperature. Also, there is a danger of illness from bacteria. However, melted snow can be consumed after treatment with water purification tablets.
- **Maintain a positive attitude.** In cold weather operations, soldiers will face many new challenges, but none that they cannot overcome. Leadership will be reflected in soldier's attitudes and performance. Leaders must watch for early signs of cold stress in their soldiers, such as fatigue, lethargy, apathy, irritability, withdrawal, loss of dexterity or decision-making ability, decreased group cooperation, disorientation, or slurred speech.

Common Cold Weather Injuries

Moderate hypothermia:

When hypothermia is detected in its early stage, a soldier may respond well to the removal of the cold stress. In the absence of a serious underlying medical condition, the chances for successful re-warming are good. While we cannot change the air temperature, we can replace wet clothing with dry, protect the soldier from the wind, add layers of insulation, and apply heat. Keep in mind that a re-warmed soldier should not return to the cold until his energy and fluid reserves have been replenished. After re-warming from the early stage of hypothermia, the soldier should be given a good hot meal, several quarts of liquids, and adequate rest before returning to duty. A fatigued or dehydrated soldier is a strong candidate for another episode of hypothermia.

Advanced hypothermia:

Symptoms: If a chilled or cold soldier does not respond immediately to basic re-warming efforts, or if he continues to exhibit symptoms of hypothermia, the soldier may be in a more advanced stage of hypothermia than initially thought, and the leader should immediately initiate action to evacuate the soldier to a medical facility.

Treatment: Move the casualty out of the wind to a sheltered environment. Replace wet clothing with dry clothing or sleeping bags. Cover the casualty with blankets or other insulating material. Apply heating pads (if available) wrapped in towels to the casualty's armpits, groin, and abdomen. Give the casualty warm, nutritious fluids to drink. Do not give alcoholic beverages or tobacco products to the casualty. Wrap the casualty from head to toe and evacuate to a medical treatment facility in a recumbent (lying down) position.

During evacuation, the soldier should be insulated from the cold surfaces of a vehicle or sled. A windproof outer layer will reduce the patient's convective and evaporative heat loss. Wet clothing must be replaced with dry. If the patient is conscious and alert, he can be given warm liquids to drink (being careful not to burn him) and simple, sweetened foods to eat, including candy bars. Carbohydrates are the fuel most quickly transformed into heat and energy. However, hot liquids should not be given by mouth to a severely hypothermic soldier. If the patient is semiconscious, try to keep him awake.

Severe hypothermia:

Symptoms: In severe cases of hypothermia, the patient produces little or no heat and, in the absence of external heat sources, may cool further. Immediate evacuation is the preferred action for casualties suffering severe hypothermia; treatment should not be undertaken in the field. Do not delay evacuation to attempt re-warming. Rapid re-warming may lead to "re-warming shock."

Treatment: Cut away wet clothing and replace with dry clothing. Ensure that the casualty's airway remains open, but do not use an oropharyngeal airway (J-tube). Perform mouth-to-mouth resuscitation if the casualty's breathing rate drops below five respirations per minute. Apply an additional heat source. The casualty's body is not able to generate sufficient body heat and must receive warmth from another source. One method is to place the casualty in a sleeping bag with his outer clothing removed and have another soldier also remove his outer clothing and get into the sleeping bag with him. Cover both soldiers with additional clothing. The casualty's body will absorb the heat given off by the second soldier's body. Evacuate the casualty to a medical treatment facility as soon as possible. Evacuate the casualty even if you cannot detect respiration or a heartbeat. Handle the casualty gently.

Frostbite:

Frostbite is the freezing or crystallization of living tissues. Exposure time can be minutes or instantaneous if skin is directly exposed to extreme cold or high winds. Heat loss occurs faster than it can be replaced by blood circulation and is compounded by intense cold and inactivity. The extremities (fingers, toes, and ears) and face are affected first. Damp hands and feet may freeze quickly since moisture conducts heat away from the body and destroys the insulating value of clothing. The extent of frostbite depends on temperature and duration of exposure. Frostbite is one of the major nonfatal cold-weather injuries encountered in military operations. With proper clothing and equipment properly maintained and used, frostbite can be prevented. The categories of frostbite are:

- **Superficial frostbite (mild)**

- Involves only the skin
- Skin usually appears white or gray
- Surface will feel very stiff or hard, but underlying tissue will be soft.

- **Deep frostbite (severe)**
 - Extends beyond the first layer of skin and may include the bone.
 - Joint movement may be absent or restricted depending on the extent of the injury.
 - Discoloration is the same as for superficial frostbite, but the underlying tissue is hard.
 - Large areas, such as foot or hand, may appear purple as the result of sludging of blood within the vessels. (A blackened appearance will be noticed after the injury has thawed.) This category of frostbite requires immediate evacuation to a medical facility.

Factors contributing to frostbite:

- Dehydration
- Below-freezing temperatures and wind chill
- Skin contact with super-cooled metals or liquids
- Use of caffeine, tobacco, or alcohol
- Constriction of an extremity, caused by tight boots, gloves, gaiters, watchbands, or confinement in a cramped position, that reduces blood flow.
- Neglect

If tissues freeze, evacuate the victim immediately, before the frozen area begins to thaw. Thawing of a frostbitten victim is a medical procedure. Field thawing should not be attempted by non medical personnel. If the victim has frozen extremities, apply first aid, protect the frozen areas, and evacuate as a litter casualty. Give the casualty liquids and keep him comfortable during evacuation.

- DO NOT expose the frostbitten area to extreme heat that could result in burns.
- DO NOT apply ointments or medications to the frostbitten area.
- DO NOT rub, massage, or soak the frostbitten area.
- DO NOT give alcoholic beverages or tobacco products to the casualty.
- Give the casualty something warm to drink.
- Protect the frostbitten area from cold and additional injury.
- Evacuate the casualty to a medical treatment facility as soon as possible.

The buddy system is one of the prime preventative measures of frostbite. Buddies must watch each other for signs of frostbite and provide mutual aid if frostbite occurs. Frostbite should be identified early – with prompt first-aid care applied to prevent further damage.

Chilblain:

Symptoms: Chilblain is caused by prolonged exposure of bare skin to cool or cold temperatures (50oF [10oC] or lower). Signs and symptoms of chilblain include acutely red, swollen, hot, tender, and/or itching skin. Open sores or bleeding lesions may result from continued exposure.

Treatment: Apply local warming (putting bare hands over the affected area on the face; putting affected hands inside the uniform under the armpits; putting bare feet against the abdomen of another soldier). Do not rub or massage the affected area. Rubbing or massaging the area may cause tissue damage. Signs and symptoms of tissue damage may be slow to appear. Apply a field dressing to lesions. Have medical personnel evaluate the casualty when practical.

Immersion syndrome:

Immersion syndrome results from prolonged exposure (hours to days) to wet conditions at temperatures from 50°F to 32°F. Immersion syndrome occurs when cold, wet conditions constrict blood vessels. Immersion foot, trench foot, and trench hand are types of immersion syndrome injuries. Reduced blood flow to the extremity deprives cells of needed oxygen and nutrients. Permanent muscle and nerve damage may result if this cold injury is allowed to develop. For the soldier, regular attention to his feet – drying them and changing to clean dry socks once a day, or more often if his feet get wet – is all that is needed to prevent immersion foot or trench foot.

Symptoms: The extremity appears cold, swollen, and mottled. Cyanosis, a blueness of the skin resulting from imperfectly oxygenated blood, is usually present. Tactile sensitivity is reduced, as is capillary refill time. The extremity may look shiny. The patient may describe the affected area as feeling wooden.

Immersion syndrome usually occurs in three stages. In the first phase, the affected part is cold and without pain. There is a weak pulse at the site. In the second phase, the affected limb feels hot, as though burning, and has shooting pains. In the third phase, the casualty has pale skin, cyanosis around the nail beds and lips, and decreased pulse strength.

When the extremity re-warms, the skin becomes warm, dry, and red. The pulse bounds and the injury is painful. The injured area may itch, tingle, and exhibit increased sensitivity to cold, possibly permanently. Recovery can last weeks. Nerve damage may be permanent. The development of blisters, ulcers, and gangrene is possible. Amputation may also be necessary.

Treatment: Dry the affected part immediately. Re-warm the affected area gradually in warm air. Do not massage the extremity. The affected area will probably become swollen, red, and hot to the touch after it has been re-warmed. Blisters may form. Remove wet clothing and replace with dry, warm clothing. Protect the casualty from injury and infection. Elevate the affected part to reduce edema (swelling). Evacuate to a medical treatment facility as soon as practical.

Snow blindness:

Symptoms: Snow blindness is a temporary but often painful condition caused by inadequate eye protection when operating in brilliant sunshine reflecting off snow or light-colored rock. The eyes become bloodshot and feel irritated and “full of sand.”

Treatment: The proper field management technique is to apply clean, cool, wet compresses to the eyes. The patient should then wear dark, UV-protective glasses. Aspirin can be used to control the pain. Occasionally, it may be necessary to cover the patient’s eyes and lead him by the hand to an area where treatment can be administered. Recovery may take two or three days.

Sunburn:

Sunburn, often associated with a summer day at the beach, can also become a debilitating cold weather injury. Both first- and second-degree burns are possible in cold weather operations.

Symptoms: First-degree burns involve reddening of the skin; second-degree burns are characterized by the formation of blisters. Mountain climbers are especially vulnerable to sunburn because they often operate at high-altitude environments covered with highly reflective snow fields. The relatively thinner air allows more of the burning rays of the sun to penetrate the atmosphere and reflect off the snow. Because the air temperature seems relatively cold, soldiers may miscalculate the intensity of the sun or simply be too weary to take preventive action.

Treatment: Sunburn usually is treated on first notice by further applications of sunburn preventive. Sun screens/blocks should be used rather than the more common cosmetic suntan preparations. In mild cases, sunburned soldiers can continue their duties even though they may suffer significant discomfort for a few days. In more severe cases, such as second-degree sunburn (with blister formation), soldiers should be treated by medical personnel. If there is much swelling, cold compresses should be applied. Aspirin may be taken for pain and warm liquids should be administered to replenish body fluids. (Salty liquids can be administered if prescribed by medical personnel. If sunburned soldiers drink salt solutions without medical monitoring, they may become nauseated and vomit, thus compounding their dehydrated state.)

Dehydration:

Symptoms: In addition to irritability, other signs of dehydration include darkening urine, decreased amounts of urine being produced, dry mouth, tiredness, mental sluggishness, lack of appetite, increased or rapid heartbeat, dizziness, and even unconsciousness.

Treatment: The most important consideration is prevention. Leaders should ensure that soldiers consume four to six quarts of fluid per day. Coffee and liquids containing caffeine (tea, cocoa, soft drinks) should not be considered adequate sources for replenishing body fluids because they act as a diuretic, removing fluids from the body. Drinks containing caffeine should only be consumed in moderation – not as the primary means of hydration. If the soldier is conscious, administer fluids by mouth. If improvement is not obvious in an hour, evacuate the patient to a medical facility. In advanced stages of dehydration, as in the case of an unconscious soldier, immediately evacuate the patient to a medical treatment facility.

Constipation:

Symptoms: Constipation is the difficulty in passing feces caused by a deficiency in body fluids (dehydration), improper nutrition, infrequent or irregular defecation, or ignoring nature's call altogether for extended periods. Contributing factors include the unavailability of water, lack of sites protected from the elements to facilitate normal body functions, and not eating the food provided. Symptoms of constipation include loss of appetite, headache, cramping, and painful defecation.

Treatment: Treatment involves the consumption of adequate amounts and variety of foods and water (four to six quarts per day), and responding to nature's call to rid the body of waste. High-fiber foods, especially fruits, vegetables, and whole grain breads, are effective in combating constipation if accompanied by regular and adequate amounts of water. If constipation is allowed to progress beyond the self-care stage, medical treatment is necessary.

Carbon monoxide (CO) poisoning:

Carbon monoxide poisoning occurs when oxygen in the body is replaced by carbon monoxide. For soldiers, the main contributing factor is inhalation of fumes produced by fires in areas that lack proper ventilation. Stoves and/or heaters in tents and engines left running in vehicles that allow CO to leak into occupied areas are primary sources of carbon monoxide poisoning.

Symptoms: Signs and symptoms of carbon monoxide poisoning progress slowly. At the onset, they may go unnoticed because carbon monoxide is colorless, tasteless, and odorless. Many of the signs and symptoms are similar to other common illnesses: headache, tiredness, excessive yawning, confusion, followed by unconsciousness and, eventually, death. A cherry-red coloring to the tissues of the lips, mouth, and inside the eyelids occurs very late in carbon monoxide poisoning – when the patient is very near death. If this condition occurs, it may be too late to save the soldier. Action must be taken when earlier signs and symptoms appear.

Treatment: Immediately remove the victim from the source of contamination. If the soldier is not breathing on his own, administer rescue breathing. If available, give the soldier oxygen, then immediately evacuate the soldier to a medical facility. Severe complications can develop, even in casualties who appear to have recovered perfectly.

Prevention is the key. Carbon monoxide poisoning can be prevented if unit leaders enforce a few simple rules:

- Don't permit soldiers to sleep in vehicles while engines are operating.
- Ensure tent stoves and heaters are regularly serviced and inspected to confirm safe operation.
- Ensure that sleeping tents have proper ventilation.

Tent eye:

Tent eye is caused by fumes emanating from stoves and lanterns operated in a poorly ventilated shelter. It can be prevented by using properly functioning stoves and lanterns and adequately ventilating the shelter. First aid for tent eye is fresh air.

Leadership in Cold Weather Operations

The process of developing soldiers into cold weather fighters requires positive leadership. Leaders must understand the environmental threat and include plans for countering this threat in their operational plans or tactical standing operating procedures. Initially, the cold environment may be alarming, even frightening, to soldiers unaccustomed to operating in wintry conditions, especially when deployed to unfamiliar, remote areas. Some soldiers will find themselves confronted with challenges they have not encountered before. The cold becomes a constant reminder to the soldier of his vulnerability in the extreme environment and the likelihood of him becoming a casualty should he make a mistake. As soldiers gain experience, they develop confidence in themselves, their clothing, and their equipment, and learn they can fight and win in the winter, defeating both the cold and the enemy before them.

Aggressive, cheerful leadership is essential in helping soldiers overcome the challenges of the cold environment. To defeat the enemy, soldiers must first overcome the cold by learning how to live and survive the elements so they can focus on the enemy. Leaders must maintain a positive attitude toward the mission, their soldiers, and the equipment they have to carry out the tasks at hand.

Intense cold affects the mind as well as the body. Essential tasks take longer to perform and require more effort than in temperate climates. This should be considered when planning operations and giving orders – even for such routine tasks as vehicle maintenance and making or striking camp. There is no simple formula for the extra time required to accomplish tasks; it varies with differing conditions, state of training, and degree of acclimatization of the troops. It should not, however, be used as an excuse for over insurance; troops readied unnecessarily early

or left standing in the open after striking camp will suffer physically. Their morale will ebb – possibly at times when it should be at a high pitch.

Tips for leaders in cold weather operations:

Leaders need to be aware of the symptoms that characterize a unit having difficulty coping with the cold environment. The following tips will help combat the effects of the cold when it begins to affect the minds of soldiers.

Tip 1: If soldiers find it hard to remember things they have been taught, show patience; review orders and drills. Get them to think through the challenges of the environment and the mission; encourage them to ask questions. Keep their minds busy.

Tip 2: Be alert for soldiers who tend to withdraw from the group's focus; keep them involved. Soldiers who withdraw into themselves should be paired in a buddy system with soldiers who are well acclimatized to the cold environment. Remind them that everyone is in the same situation, including the enemy.

Tip 3: If soldiers get depressed, moody, or blue, and do not want to talk, encourage them to chat with each other. Circulate among the troops in their duty areas. Keep them talking and interacting.

Tip 4: If soldiers become irritable and get on each other's nerves, keep in mind that this is likely to happen. Maintain your sense of humor and show patience. Vary their duties.

Tip 5: Be aware that soldiers may tend to shirk from some tasks to keep themselves warm. Remind them that their job is to fight – that weapons and equipment must be kept in fighting order. During winter training, do not let the training become a camping trip; this is a common trap.

Tip 6: Do not accept the cold as an excuse for not carrying out orders or routine tasks. It may be the reason for taking longer, but it is not a reason for letting things slide. Remember that, although the cold may make tasks more difficult to accomplish, it does not make them impossible. With knowledge, equipment, and proper training, leaders and soldiers can defeat the cold and be successful in combat.

Tip 7: Plan the frequent rotation of soldiers into warming tents/areas to provide relief from the cold.

Tip 8: Provide warm liquids (noncaffeine) at frequent intervals, especially when rotating soldiers into warming tents/areas.

Tip 9: Plan and provide extra insulating material for individuals, when available.

The Cold Weather Clothing System:

Leaders should understand the design principles of the military cold weather clothing system. These principles are:

- Insulate
- Layer
- Ventilate

Insulation allows the creation of a microclimate around the body through which the amount of body heat lost to the environment can be regulated. By varying the amount of insulation, a soldier can regulate the amount of heat lost or retained.

Several layers of clothing provide more insulation and flexibility than one heavy garment, even if the heavy garment is as thick as the combined layers. By adding or removing layers of clothing (insulation), the soldier can regulate the amount of heat lost or retained.

Ventilation helps maintain a comfortable microclimate around the body, thereby helping control body temperature. By ventilating, the soldier can release excess heat and minimize sweating, which can lower body temperature later as it evaporates.

There are four ways to apply the principles in the military cold weather clothing system:

- **Keep clothing clean.** Dirt and grease clog the air spaces in clothing and reduce the insulating effect. Dirty clothes are cold clothes.
- **Avoid overheating.** Select the clothing needed to stay comfortable, or even a little cool. Leaders should ensure that their soldiers are not overdressed for the job they are performing.
- **Wear it loose.** All items of the cold weather uniform are sized to allow wearing of the appropriate number of layers. This means, for example, that the field jacket may appear too large when worn without all of the layers designed to fit under it. If the uniform items do not fit loosely, the insulation will be substantially reduced.
- **Keep it dry.** It is vital that all layers of clothing be kept dry because wet clothing conducts heat away from the body, compromising the microclimate around the body and making it difficult to regulate body temperature. Moisture soaks into clothing from two directions: from melting snow and frost that has collected on the outside of the clothing and from perspiration. Leaders should ensure that soldiers brush snow and frost from clothing before entering heated shelters or vehicles.

SECTION XI: FOOD AND WATER

Food and Waterborne Diseases

Sanitation is extremely poor throughout the country, including major urban areas. Local food and water sources, including ice, are heavily contaminated with pathogenic bacteria, parasites, and viruses to which most U.S. service members have little or no natural immunity. If local food, water, or ice from unapproved sources is consumed, diarrhea diseases can be expected to temporarily incapacitate a very high percentage of personnel within days. Hepatitis A, typhoid fever, and hepatitis E are common among the local population; these diseases can cause prolonged illness in a smaller percentage of U.S. personnel exposed to contaminated food or water sources. In addition, large cholera outbreaks occur among the local population annually and could pose a risk to U.S. personnel. U.S. personnel are not allowed to eat any local food. Eat only food prepared by authorized food service organizations.

Food considerations:

Food can dehydrate and kill if there isn't sufficient water in the body for sweat and digestion. The body will give priority to food digestion by robbing the rest of the system of needed moisture. A soldier should eat only if he can find enough water to replenish his supply regularly. If there is a choice of food, eat carbohydrates; they use the least amount of water to digest. Fats and proteins use the most. Military emergency rations are mostly carbohydrates for this reason.

Water:

Lakes, rivers, streams, or other surface water in rural areas may be contaminated with leptospirosis. Regionally, large leptospirosis outbreaks have been reported, associated with contact with contaminated water sources. Operations or activities that involve extensive water contact may result in personnel being temporarily debilitated with leptospirosis. If unapproved water must be used in an emergency, the water may be disinfected by:

- Adding calcium hypochlorite at 5.0 ppm for 30 minutes
- Adding Chlor-Floc or iodine tablets according to label instructions
- Heating water to a rolling boil for 5 to 10 minutes
- Adding 2 to 4 drops of ordinary chlorine bleach per quart of water and waiting 30 minutes before using it

Either U.S. military preventive medicine or veterinary personnel should inspect bottled water supplies. Bottled water does not guarantee purity; direct sunlight on bottled water supplies may promote bacterial growth. Water in canals, lakes, rivers, and streams is likely to be contaminated; unnecessary bathing, swimming, and wading should be avoided. If the tactical situation requires entering bodies of water, all exposed skin should be covered to protect from parasites. Following exposure, it is important to dry vigorously and change clothing.

Water will determine how long a soldier can survive in the desert, and its usage must be a consideration in every decision made. All life/activity in the desert is linked to the amount of water available, and needs vary according to temperature and the amount of exertion. Soldiers should procure and consume as much water as possible, at every opportunity.

Conserve body moisture by:

- Doing any heavy labor slowly or in the cooler hours— before 1000 and after 1800. AVOID OVERHEATING.
- Staying still in the shade and out of the wind when it is hot.
- Keeping clothing on and closed to trap the sweat next to the skin and prevent sunburn.
- Wearing clothing loose and in layers. If necessary, improvise additional layers of clothing using whatever is available.
- Keeping the mouth closed. Breathe through the nose. You lose one pint of water per day through normal breathing. A cloth across the mouth and nose will reduce respiration water loss.
- Soaking clothes with undrinkable water (if it won't cause a chemical burn).
- Reducing eating if water is not available.
- Refraining from smoking - tobacco dries out the mouth.

Locating surface water:

Locating water in desert areas requires keen observation. Surface water is usually found after rare rainstorms in the form of intermittent streams and pools of water or water-filled cracks in rocks. Water may take a few weeks to a couple of months to dry up. By looking for logical water collection area indicators, soldiers might be able to locate a surface source.

- Lush green or flowering plants indicate recent rainfall in the area.
- Look in low spots between hills or dunes and at the base of cliffs.
- Rocky places may hold large pools for a long time, especially under overhangs or in cracks in the rock. Pools of water may be standing in dry stream beds.
- Fog in the morning could be another indicator of recent rain.
- Signs of animals indicate the presence of water.
- The “v” formed by the intersection of two animal trails usually points toward water.
- Flight direction of birds at dusk and dawn can indicate water.
- Large quantities of bird dung at the surface of a crack in a rock may mean water in the crack.
- The sound of frogs at night can guide a soldier to water.
- The presence of bees and/or other insects may indicate water is nearby.
- Brush piles in low spots are sometimes used by local people to slow evaporation and keep animals out of pools of water.
- Another surface source of water can be dew. If dew is heavy, tie cotton rags, clothing, or bandages to the ankles and walk through the low brush and grass. When the rags become soaked, wring them out into a container.

Shallow lakes have not been mentioned due to the great possibility that such bodies of water will be contaminated with salt, alkali, magnesium, or sulfur. If swallowed, these could act as dehydrating agent, laxative, or poison. To use water from this source, filter it with the Survival-06-Manual Reverse Osmosis Water Pump (FSN 4610-01-313-6085). This device is capable of filtering salts, alkali, sulfur, metals, bacteria, and viruses suspended in water sources. The pump can provide up to six gallons of fresh drinking water per day from otherwise unusable sources. (If equipped with this pump, the unit’s evasion plan of action development, survival on the ground, and recovery should take this capability into consideration.)

The sun may be used along with plastic to obtain water.

- **Vegetation bag:** This is a large plastic bag in which cut vegetation is placed. The bag is then tied shut and left in the sun. During the hottest part of the day, the plant emits water, which is trapped and condensed in the bag. This is the preferred method for soldiers because a vegetation bag can be left on the ground or in a sunny hole in the ground, where the risks of it being noticed are reduced.
- **Transpiration bag:** This is a plastic bag placed over the leafy portion of a branch and then tied. This is not a preferred method to be used in an evasion situation, since there is a risk the bags will be noticed.
- **Solar still:** This is the least preferable choice, and should be used only in a survival situation, and only if expected to be in the area for more than one day. The effort to construct this device will expend more water than it produces on the first day.

Ground (subsurface) water:

Springs and underground rivers sometimes come to the surface and then disappear into the desert. These areas are usually inhabited oases. The depth of subsurface water can vary widely; it may be just under the surface or over 100 feet deep. Water near the surface might be obtainable by digging in likely spots such as:

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- Areas with mud or moist sand (mud can be wrapped in cloth and wrung out)
- The lowest spot between hills or dunes
- Low spots at the base of cliffs or in narrow rock valleys
- Low spots at the outside curve of a dry stream bed
- Low spots with rich, green vegetation (places where animals have scratched at the surface or flies hover over the ground)

Man-made structures, such as wells, cisterns, and Karez (irrigation tunnels) are another potential source of water.

- Wells are the major source of water to desert people. They may be 10 to over 100 feet deep. Well users bring their own rope and bucket. These wells are usually located in low places, such as dry rivers, valleys, or at the base of dunes or cliffs.
- Cisterns catch and hold water from intermittent streams or run-off from storms. Soldiers encountering ruins can look for old irrigation ditches and follow them uphill from flat places that might have been planted fields at one time. Cisterns are likely to be at the bottom of a dry river bed or canyon and are usually nothing more than brick or rock-lined storage tanks.

All of these manmade subsurface water sources require a long line and some form of bucket to get to the water. Wells in the desert are usually found along trails and can be from 20-30 miles apart. Permanent camps may be 2-3 miles from wells, although nomads sometimes camp very close to a well. Watch for worn paths leading away from camp areas; they may lead to a well. Look for old wells uphill from abandoned homes, farms, or other dwellings. If animal dung and remains of old campfires are noticed, there may be a well nearby. Some people stack animal dung near the wells to dry for use as fuel at a later date.

Well openings may be covered to prevent sand and debris from filling them in. Look for doughnut-shaped mounds, brush, or sand-filled depressions. They may have to be dug out. Be careful not to allow sand or debris to fall down the hole; the water may be very shallow in the bottom of the well.

Finding water is not the only problem facing soldiers. Once found, it must be obtained without being detected. Scout the area and observe the well from a distance. If the enemy knows a soldier is in the area, they may try setting up an ambush at the well. They know the soldier needs water! Look carefully for vehicle tracks; carefully scan any high ground for enemy observers or dust. A water source should be approached during darkness when escape chances are increased if the enemy has set a trap.

When a soldier uses a well, he should get as much water as he can carry and move away from the area as soon as possible. The volume of water carried governs the soldier's range of travel and ability to hide for a length of time if the enemy is near. Further, the next water source may be dried up or inaccessible. Fill all water bags, canteens, and any improvised containers to hold water, such as a poncho, plastic bag lining a rucksack or survival kit container, a condom in a helmet, or pneumatic life preserver bladders. Both the approach and departure from the well should be evasive from one point of concealment to the next. If in a group, post a lookout. Tracks should be brushed out when leaving.

All water should be considered biologically contaminated. If water purification tablets are available, use them. Dysentery and other waterborne diseases can cause severe dehydration. Filtering and aeration might improve the taste and appearance of water. If no purification tablets

are available, a soldier still needs the water to live. If boiling is not an option (the smoke, flame, and odor from a fire are very risky in open terrain), clean the water as much as possible by other methods. Allow sediments to settle, then filter the water through cloth, sand, and/or charcoal. Fully aerate (pour the water from one container to another or shake up with top open). Allow contact with direct sunlight.

Water containers need care. Protect them from thorns, grit, abrasions, or sharp rocks, and try to keep them in the shade. Place them where they will not be damaged or destroyed. Protect water and containers from freezing on winter nights, when expanding ice may burst the containers. Keep them close to the body. Be sure rodents cannot gnaw on them.

SECTION XII: FIELD SANITATION AND PERSONAL HYGIENE

Throughout history, disease and non-battle injuries have been the largest cause of military casualties. Personal hygiene is difficult, at best, in cold weather operations. The role of field sanitation is to aid the unit in protecting the health of troops. Field sanitation concerns itself with the basic responsibilities of:

Field Sanitation

Establish garbage pits:

- Whenever possible, dispose of all garbage in pits; burn or bury it prior to departure.
- There should be a pit for each platoon.
- Garbage must be buried at least 100 feet from any water source.
- Patrols should never leave behind any evidence of their presence in an area. All waste should be carried until it can be disposed of properly to avoid giving away potential intelligence to the enemy about patrol or campsite locations or activities.
- During training, bag all trash and garbage and haul it to the rear for disposal.

Establish latrines:

- Normally, a central latrine should be established if dispersion within the camp is not too great. One latrine will usually serve the needs of three to four shelters or a unit of platoon size.
- Chemical toilets are the preferred latrine devices.
- Use cat-hole latrine for marches, straddle trench for 1-3 day bivouac sites, deep pit latrine for temporary camps, burn-out latrines and soakage pits for urinals.
- The latrine must be placed downwind of the campsite, but not so far from the shelters that the placement encourages individuals to break sanitary discipline.
- It should be wind-proofed by branches, snow blocks, ponchos, or other available materials, and should be camouflaged.
- For training, an empty MRE box, lined with a trash bag, can suffice. Full bags can be sealed, left in the box, and then hauled to the rear.
- Plan to take lime with you.
- Locate latrines at least 100 meters from the unit mess and at least 100 meters from any water source.

Waste management:

All types of waste are generated each day in the field. Always bury your waste immediately to prevent flies from spreading germs from waste to your food. Also, burying your waste helps keep unwanted animals out of your bivouac area. If waste is not disposed of properly, the camp will quickly become an ideal breeding area for flies, rats, and other vermin. Diseases such as dysentery, typhoid, cholera, dengue, and plague could compromise the integrity of the unit. To combat this problem, unit medical personnel should provide technical assistance in the fabrication, location, and maintenance of field waste-disposal facilities. They also inspect these facilities before their initial use to ensure their proper construction and location, and then reinspect on a daily basis.

Personal Hygiene

The following techniques and procedures can be used to maintain minimal personal hygiene in the field, especially if laundry and bath support is not readily available:

Cleanliness:

- Shave, if necessary, at night in the shelter so that facial oils stripped during shaving will be replenished overnight before the face is again exposed to the elements.
- Brush teeth daily. If a toothbrush is not available, chew the end of a twig into a make-shift brush. If a twig is not available, salt on a fingertip can suffice if applied gently.
- Change underwear as frequently as practical, at least twice weekly. Change socks as often as needed to keep the feet dry. Use foot powder as a dry rub to clean the feet.

Foot care:

- Trim toenails straight across at approximately a 90-degree angle with the edges of the nails. This relieves pressure at the edges of the nails, permitting the nail to arch in the middle, so that the corners won't cut/dig into the skin below.
- Use foot powder to dry feet. Apply powder on feet and between toes. Remove excess. Do not put foot powder in socks; extra powder may cake and hasten the onset of blisters.
- Blisters can become a problem unless they are treated at the first sign of irritation, before a blister actually forms. Tape over a developing hot spot; the bandage should be sufficiently large enough so that the tape touches only non-irritated skin. Once a blister has formed, apply a doughnut-type bandage to relieve pressure on the blister. Again, the doughnut and bandage should be large enough to encircle the blister and avoid further irritation of the blistered area. Use tincture of benzoin to help the tape adhere to the skin; it also helps toughen the skin. Never lance or drain blisters unless they are surrounded by redness or they are oozing purulent material, indicating infection. If this is the case, drain the blister, clean it with soap and water, and cover with a clean, dry dressing until it can be assessed by medical personnel.

Skin care:

- Bathe frequently; take a full bath at least once every week. If showers or baths are not available, use a washcloth daily to wash:
 - Genital area

- Armpits
- Feet
- Other areas where you sweat or that become wet, such as between thighs or (for females) under the breasts.

Potable Water

Safe potable water is essential to the Army. Water that is not properly treated can transmit such diseases as typhoid and paratyphoid fevers, bacillary dysentery, cholera, poliomyelitis, and common diarrhea. In some areas, water may also be the means of transmitting infectious hepatitis, schistosomiasis, and amoebic dysentery. Lessons from Operation DESERT SHIELD and DESERT STORM showed that units should use a planning factor of at least 7 gallons of water per soldier per 24-hour period.

Treat the individual water supply with one iodine tablet per a quart-size canteen if the water is clear, two tablets if the water is cloudy. Let stand for 5 minutes with the cap loosened, and shake to permit leakage to rinse the thread around the neck. Tighten cap and let stand for 20 minutes. Calcium hypochlorite maybe used: Add one ampule in one-half canteen cup of water, dissolve, then pour one canteen cap of the solution in the canteen, shake and let stand for 30 minutes.

The best containers for small quantities of water (5 gallons) are plastic water cans. Water in plastic cans will be good up to 72 hours, compared to metal that will only be good for 24 hours. However, you should change the water in your canteen at least every 24 hours. Water in trailers, if kept in the shade, will last up to 5 days. If the temperature outside exceeds 100°F, the temperature of your water must be monitored, and when it exceeds 92°F, it should be changed, as bacteria will multiply. If not changed, you will end up with a case of diarrhea. Ice in containers will keep water cool. If ice is put in the water trailers, the ice in it must be removed before the trailer is moved, as the floating ice may destroy the inner protection of the trailer.

CHAPTER 3

An Introduction to Afghanistan

**SECTION I: HISTORICAL REVIEW: U.S. IN OPERATION ENDURING FREEDOM**

Osama bin Muhammad bin Awad bin Laden was born in 1955, the youngest of twenty surviving sons of one of Saudi Arabia's wealthiest and most prominent families. He is part feudal Saudi, an aristocrat who, from time to time, would retreat with his father to the desert and live in a tent. He came of age during the rise of OPEC and the extraordinary wealth that accompanied it. He is of a Saudi generation whose religious fervor or political zeal led thousands to fight a war in the distant Muslim land of Afghanistan.

Osama bin Laden has been involved in establishing two very important organizations: MAK (Maktabu l-khidamat) in 1979 and al-Qaida in 1988. The purpose of MAK was to drive the Soviet troops out of Afghanistan and al-Qaida grew out of MAK. Bin Laden was able to recruit troops from all over the Arab world, but especially from Saudi Arabia, Algeria, and Egypt. More than 10,000 are believed to have been trained by MAK to participate in the war against the Soviet Union. Large numbers of MAK troops lost their lives in the war, but the survivors became exceptionally skilled soldiers.

The ideology of al-Qaida is to cleanse Muslim countries of corrupt and secular leadership and fight against the powers that threaten Muslim states and the holy places of Islam. The powers they believe to be threatening Muslim states are principally the U.S. and Israel; the U.S. for interfering in numerous areas in the Muslim world politically and military and Israel for occupying Palestine. The ideology has three goals: (1) Radicalize existing Islamic groups and create Islamic groups where none exist, (2) Advocate destruction of the U.S, which is seen as the chief obstacle to reform in Muslim societies, and (3) Support Muslim fighters in Afghanistan, Algeria, Bosnia, Chechnya, Eritrea, Kosovo, Pakistan, Somalia, Tajikistan, the Philippines, and Yemen.

When bin Laden arrived in Afghanistan, the government that had assumed power after the departure of the Soviets was being besieged by a fundamentalist student faction known as the Taliban. Its leader was Mullah Muhammad Omar, who, like bin Laden, had fought in the jihad. The two men had a similar ideology and complementary needs: bin Laden needed refuge, and the fledgling Taliban needed cash. Bin Laden gave the mullah an initial payment of three million dollars for the cause, and the Taliban was able to capture the key center of Jalalabad in September of 1996. Ten days later, the capital, Kabul, fell. Sometime after that, according to U.S. officials, bin Laden, through the marriage of one of his daughters, became Mullah Omar's father-in-law.

The Taliban first drew the world's attention in 1994 when Pakistan recruited them to protect their trade convoys. They grew in popularity because they fought corruption and lawlessness and because they, like most of the Afghan people, are ethnic Pashtuns, while the leaders at the time were Tajiks and Uzbeks. By 1998, the Taliban had virtually eliminated the opposing northern alliance.

The Taliban's popularity with many Afghans initially surprised the country's warring mujahedin factions. But it was not purely a question of ethnicity. Ordinary Afghans, weary of the prevailing lawlessness in many parts of the country, were often delighted by Taliban successes in stamping out corruption, restoring peace, and allowing commerce to flourish again. Their refusal to deal with the existing warlords, whose rivalries had caused so much killing and destruction, also earned them respect.

The Taliban said their aim was to set up the world's most pure Islamic state, banning frivolities like television, music, and cinema. Their attempts to eradicate crime were reinforced by the introduction of Islamic law including public executions and amputations. A flurry of regulations forbidding girls from going to school and women from working quickly brought them into conflict with the international community. Such issues, along with restrictions on women's access to health care, also caused some resentment among ordinary Afghans.

From the mid-1990s the Taliban provided sanctuary to Osama bin Laden and provided a base for his and other terrorist organizations. Bin Laden provided both financial and political support to the Taliban. Bin Laden and his al-Qaida group were charged with the bombing of the U.S. embassies in Nairobi and Dar Es Salaam in 1998. In August 1998 the United States launched a cruise missile attack against bin Laden's terrorist camp in Afghanistan. Bin Laden and al-Qaida are believed to be responsible for the September 11, 2001 terrorist attacks in the United States, among other crimes.

Following the Taliban's repeated refusal to expel bin Laden and his group and end its support for international terrorism, the U.S. and its anti-terrorist coalition began a campaign to target terrorist facilities and various Taliban military and political assets within Afghanistan.

SECTION II: LOCATION AND DESCRIPTION

Lying more than 482 kilometers (300 miles) from the sea, Afghanistan is a barren, mostly mountainous country of about 647,500 square kilometers (250,000 square miles). It is bordered by Turkmenistan, Uzbekistan, and Tajikistan to the north, Pakistan to the east and south, and Iran to the west. Including a long, narrow panhandle (the Wakhan Corridor) in the northeast, Afghanistan has a northeast-southwest extent of about 11,450 kilometers (900 miles), and a northwest-southeast extent of about 804 kilometers (500 miles). With peaks up to about 7315 meters (24,000 feet), the Hindu Kush forms the spine of the country, trending southwestward from the Pamir Knot to the central Afghan province of Bamian. Subsidiary ranges continue to the south and the west with decreasing elevations, gradually merging into the plains that continue into Iran and Pakistan. A broad plateau stretches from north of the Hindu Kush to the Amu Darya River and eventually to the Russian steppes. In the east, the mountains are indistinguishable from those of Pakistan. Afghanistan is approximately the size of Texas.

SECTION III: TOPOGRAPHY

About one-third of Afghanistan, in the southwest and north, is arid plain. The southwestern plain is the larger of the two and is a barren desert with large areas of drifting sand, scattered hill belts, and a few low mountains. Small villages along a few intermittent streams, small settlements, and a narrow band of cultivation along the Helmand River are the only features that break desolation. The Helmand is one of the few perennial streams in the region. The northern plains are actually steppes with seasonal grasslands supporting a small nomadic population. Permanent settlements are located along the margin of the steppes and on the flood plain of the Amu Darya River.

The mountains that comprise the other two-thirds of the country are the perennially snow-capped Hindu Kush in the northeast and progressively lower mountains in the west. The Hindu Kush have sharp-crested ridges and towering peaks, while the lower, western mountains are generally rounded or flat-topped. Afghanistan can be broken down into three military operational zones: the northern steppe, the Afghan highlands, and the southwestern desert basins.

SECTION IV: DRAINAGE

Afghanistan has four major river systems that originate in the Hindu Kush: the Kabul, the Helmand, the Amu Darya, and the Harirud. Of the four, only the eastward flowing Kabul ever reaches the ocean; the other three eventually disappear into salt marshes or desert wastes. Only the Amu Darya (also known as the Oxus) has significant navigable reaches. The rest are fordable for the greater part of the year throughout their courses. The Amu Darya also serves as the northern border of Afghanistan. The Helmand is the largest in flow and volume and runs southward across the southern desert into the salt marsh wastes found along the Afghan-Iranian border. The Harirud runs westward past Herat then turns northward, forming the border between Afghanistan and Iran.

All the Afghan rivers and their tributaries are used for irrigation. Supplementing the stream irrigation is the karez, a system of underground channels (with vertical access and maintenance shafts) carrying water from the base of the mountain slopes to oases on valley floors. The signature of karez (qanat in Iran), particularly noticeable from the air, is the row of evenly spaced openings (shafts) surrounded by mounds of earth that define the course of the underground channels.

SECTION V: VEGETATION

What little natural vegetation there is in Afghanistan consists mainly of bunch grasses; trees are scarce and mostly limited to planted poplars and willows around settlements. Because of infertile soils and centuries of seeking fuel and forage, even scrub and brush are difficult to find. Timber is mostly absent. Any timber laying around the ground or attached to buildings in deserted villages should be suspect for booby traps. Timber is very scarce and villagers will booby trap their homes to prevent theft and pilferage.

Irrigated areas produce wheat, barley, corn, and rice, as well as sugar beets, melons, grapes, cotton, almonds, and deciduous fruits. The two primary Afghan cash crops are opium poppy and cannabis. Afghanistan is the major opium supplier for the European heroin market.

SECTION VI: CLIMATE

Marked seasonal extremes of temperature and scarcity of precipitation characterize Afghanistan's climate. Topographic features strongly influence all elements of the climate. Winters (December through February) are dominated by constantly changing air masses associated with passing migratory lows and frontal systems. Winters are cold, with nighttime temperatures below freezing common in low elevations and frequent winter snows at higher elevations. To the south and southeast the low-level temperatures are less severe. Winter snows are frequent at the higher elevations, and there are permanent snow fields in the Hindu Kush. Summers (June through August) are continuously sunny, dry, and severely hot; however, intrusions of moist, southerly monsoon air occasionally bring rain, increased humidity, and cloudiness to the extreme eastern portions. At elevations below 1,220 meters (about 4,000 feet) temperatures rise to over 38°C (100°F) on a daily basis. Very low humidity is normal during the summer. In the other seasons, relative humidity is high in the early morning and moderate in the afternoon over most sections. In most of Afghanistan, winter and spring are the cloudiest periods, and clear skies are common in summer.

Precipitation is scarce, with desert conditions prevailing in the southwestern and northern plains. What annual precipitation there is falls mostly in the winter and spring; summers are almost uniformly rainless. Thunderstorms are most frequent during the spring, but also occur during summer in extreme eastern portions of the country. Flash floods sometimes result from severe thundershowers. Long droughts are not uncommon.

SECTION VII: ETHNICITY AND LANGUAGE

The population of Afghanistan includes many different ethnic groups. The Pashtuns (Pushtuns), who make up more than half the population, have traditionally been the dominant ethnic group. Their homeland lies south of the Hindu Kush, but Pashtun groups live in all parts of the country. Many Pashtuns also live in northwestern Pakistan, where they are called Pathans. Pashtuns are usually farmers, though a large number of them are nomads, living in tents made of black goat hair. Male Pashtuns live by ancient tribal code called Pashtunwali, which stresses courage, personal honor, resolution, self-reliance, and hospitality. The Pashtuns speak Pashto, which is an Indo-European language and one of the two official languages of Afghanistan.

The Tajiks (Tadzhiks), are the second largest ethnic group in Afghanistan. They live in the valleys north of Kabul and in Badakhshan. They are farmers, artisans, and merchants. The Tajiks speak Dari (Afghan Persian), also an Indo-European language and the other official language of Afghanistan. Dari is more widely spoken than Pashto in most of the cities. The Tajiks are closely related to the people of Tajikistan.

In the central ranges live the Hazaras. Although their ancestors came from the Xinjiang region of northwestern China, the Hazaras speak an archaic Persian. Most are farmers and shepherders. The Hazaras have been discriminated against for a long time, in part because they are minority Shiites (followers of Shia Islam) within a dominant Sunni Muslim population. In the east, north of the Kabul River, is an isolated wooded mountainous region known as Noristan. The Noristani people who live there speak a wide variety of Indo-European dialects. In the far south live the Baluchi, whose Indo-European language (called Baluchi) is also spoken in southwestern Pakistan and southeastern Iran.

To the north of the Hindu Kush, on the steppes near the Amu Darya, live several groups who speak Turkic languages. The Uzbeks are the largest of these groups, which also include Turkmen and, in the extreme northeast Vakhan Corridor, the Kyrgyz people. The Kyrgyz were mostly driven out by the Soviet invasion and largely emigrated to Turkey. All of these groups are settled farmers, merchants, and semi-nomadic sheep herders. The nomads live in yurts, or round, felt-covered tents of the Mongolian or Central Asian type.

Prior to the war important political positions were distributed almost equally among ethnic groups. This kept ethnic tensions and violence to a minimum, though the Pashtuns in Kabul were always the politically dominant group. In the mid-1990s attempts have been made to reestablish shared rule; however, many of the ethnic groups have sought a greater share of power than they had before the war, and violence is a common result of the disputes.

SECTION VIII: KEY CITIES

Kandahar is located in southern Afghanistan, approximately 500 kilometers (310 miles) southwest of Kabul and 90 kilometers (56 miles) northwest of the Pakistan border. The city lies at the northeast corner of the vast, nearly uninhabited Dasht-i Margow. Kandahar is in an area of subtropical steppe. Sand ridges and dunes alternate with expansive desert plains. There are also areas of barren gravel and clay where sparse vegetation and low growth prevail. Kandahar's population is estimated at 329,300 (U.S. Census Bureau, 2001).

Kabul is located in northeastern Afghanistan on the banks of the Kabul River. The city spreads out on the north and south banks of the river and is further separated into northern and southern sections by a series of low hills. The Kabul River flows from southwest to northeast and through the water gap known as "Lion's Gate," which divides the hills. Elevations range from 1,789 meters above sea level at Kabul International Airfield to 2,219 meters at Kohe Sher Peak near the city center. Several small streams flow in from the west, joining to form the Cheltan River, which, in turn, joins the Kabul River just south of the Lion's Gate. The Logar River flows north to join the Kabul River in eastern Kabul; Khargz Lake, about 20 kilometers west of central Kabul, is the only lake in the region. There are, however, several small marshes scattered across the northeastern half of the city and environs. Soils on the mostly flat plains around Kabul are deep silty sand, clayey sand, and gravels that are fair to good in over-all suitability for construction purposes. On hill slopes, bedrock outcrops comprise half or more of the surfaces.

Jalalabad is the largest urban center in eastern Afghanistan between Kabul (125 kilometers [78 miles] to the west) and the Pakistan border at the Khyber Pass (75 kilometers [47 miles] to the east). The city has been an important commercial, telecommunications, and cultural center, and has a population of 154,200 (U.S. Census Bureau, 2001). The city dominates the entrances to the Laghman and Kunar valleys and is a leading trading center with India and Pakistan. Oranges, rice, and sugarcane grow in the fertile surrounding area, and the city has cane processing and sugar refining as well as papermaking industries.

Mazar-e Sharif, the provincial capital of the Balkh Province, is situated on the main route between Kabul and the Termiz, Uzbekistan. Historically, its importance was twofold: it was 70

kilometers (43 miles) south of the Soviet Union, and it was a center for Afghanistan's fledgling oil industry. Its population is estimated at 232,800 (U.S. Census Bureau, 2001).

Herat is centered in western Afghanistan on the flat river plains a few kilometers north of the Harirud River. The Iran border is approximately 120 kilometers (75 miles) to the west, Turkmenistan 110 kilometers (68 miles) to the north, and Kabul is approximately 650 kilometers (400 miles) to the east. Elevations within the city range from roughly 920 meters (3,018 feet) above sea level (ASL) in the south to 960 meters (3,150 feet) ASL in the north. Mountains ranging in height from 1,800 meters to 3,300 meters (about 6,000 to 11,000 feet) surround the city. Earthquakes and tremors are common occurrences. Herat experiences a hot, north-northwesterly wind from May to September. This wind blows constantly, but is particularly strong in the afternoon; wind velocity is typically around 50 miles per hour (43.5 knots), with gusts up to 80 miles per hour (69.5 knots).

SECTION IX: WAY OF LIFE

Although the Afghan population is composed of many distinct ethnic groups, certain elements of their way of life are much the same. Characteristically, the family is the mainstay of Afghan society. Extremely close bonds exist within the family, which consists of the members of several generations. The family is headed by the oldest man, or patriarch, whose word is law for the whole family. Family honor, pride, and respect toward other members are highly prized qualities. Among both villagers and nomads the family lives together and forms a self-sufficient group. In the villages each family generally occupies either one mud-brick house or a walled compound containing mud-brick or stonewalled houses. The same pattern prevails among the nomads, except that tents replace the houses.

Settlements in Afghanistan with less than 100 houses number over 10,000, and those with 100 to 250 houses number about 1,000. There are 53 urban centers that range in size from 2,500 to 25,000 people. In the smaller villages there are no schools, no stores, nor any representative of the government. Each village has three sources of authority: the malik (village headman), the mirab (master of the water distribution), and the mullah (teacher of Islamic laws). Commonly, a khan (large landowner) will control the whole village by assuming the role of both malik and mirab.

Baggy cotton trousers are a standard part of the Afghan villager's costume. The men wear long cotton shirts, which hang over their trousers, and wide sashes around their waists. They also wear a skullcap, and over that, a turban, which they take off when working in the fields. The women wear a long loose shirt or a high-bodice dress with a swirling skirt over their trousers; they drape a wide shawl about their heads. Many women wear jewelry, which is collected as a form of family wealth. When urban women leave their houses they usually wear a burka or shadier, a long tentlike veil that covers them from head to foot. Women in villages seldom wear the burka, and educated urban women discarded the custom, especially under Soviet domination where it was regarded as backward.

The diet of most Afghan villagers consists mainly of unleavened flat bread called nan, soups, a kind of yogurt called mast, vegetables, fruit, and occasionally rice and meat. Tea is the favorite drink.

Village men work in the fields, joined by the women during the harvest. Older children tend the flocks and look after the smaller children. The village mosque is the center of religious life and is often used as the village guest house.

Twice a year groups of nomads may pass through villages on their routes from summer highland grazing grounds to the lowlands where they camp during the winter. The villagers traditionally

permit the nomads to graze their animals over the harvested fields, which the flocks fertilize by depositing manure. The nomads buy supplies such as tea, wheat, and kerosene from the villagers; the villagers buy wool and milk products from the nomads. For food and clothing, the nomads depend on the milk products, meat, wool, and skins of their flocks; for transportation they depend on their camels. Nomadic women are freer and less secluded than the village women.

A favorite sport in northern Afghanistan is a game called buzkashi, in which teams of horsemen compete to deposit the carcass of a large headless calf in a goal circle. Afghans also play polo and ghosai, a team sport similar to wrestling. The most important holiday in Afghanistan is Eid and Nowruz, or New Year's Day, which is celebrated on the first day of spring.

APPENDIX A

Convoy Leader Checklist

- Binoculars
- Radio check (internal, command, administrative, and logistics)
- MTS operational
- Convoy order and execution matrix
- SOI
- Map with current graphics
- Strip map with extra copies
- Sensitive items/personnel list
- Combat lifesaver w/aid bag (date?)
- Current situation brief (intelligence)
- Risk assessment signed by commander
- GPS (programmed with appropriate mission information/extra batteries)
- Vehicle and personnel manifest

APPENDIX B**Individual Checklist**

Individual Checklist: (per SOP, as designated by unit commander)

- Weapon (cleaned, function tested, and appropriately lubed)
- Ammunition and magazines (magazines serviceable and ammunition loaded correctly)
- Kevlar (chin strap serviceable)
- Flak vest/Body armor (plates properly installed and worn)
- Notebook and writing device
- Issued eye protection goggles (clear lenses installed?)
- LBE w/2 canteens (topped off)
- 2 First-aid pouches w/dressing
- Flashlight w/extra batteries and bulb
- Military ID card
- I.D. Tags
- Civilian/Military drivers licenses
- Combat lifesaver kit
- IV Bags x type (expiration dates checked)
- NVGs with batteries
- OVM keys
- Attended convoy brief
- Attended rehearsals

APPENDIX C**Convoy Vehicle Checklist**

- ___ Completed 5988E (before PMCS) (Are there any issues yet to be resolved?)
- ___ Current vehicle dispatch (Date expiration?)
- ___ Fuel/fluid levels topped off
- ___ Additional package products
- ___ VS-17 panel
- ___ Extra fuel can topped off and secured
- ___ Class I basic load (___ MREs / ___ Water)
- ___ Communication check of all available systems (What are ranges, frequencies?)
- ___ Inventory of all required signal devices
- ___ BII complete
- ___ Execution matrix
- ___ Tow bar (if specified)
- ___ Cargo secured IAW guidance/TM (Number of cargo, required devices serviceable/
on-hand?)
- ___ Road guard belt
- ___ Flashlight w/extra batteries and bulb
- ___ Map/Strip maps
- ___ Warning triangles
- ___ Fire extinguisher
- ___ Windows and mirrors cleaned
- ___ Emergency call signs and frequencies posted near each radio
- ___ MEDEVAC nine line format posted near each radio
- ___ Turn signals and lights serviceable/functioning
- ___ Issued pyrotechnics
- ___ Litter(s) (if designated)

(NOTE: Units should add and delete items based on METT-TC.)

APPENDIX D

Sample Convoy Brief

Convoy brief format (modified from FM 55-30, *Army Motor Transport Units and Operations*):

Movement Order No. _____

References: A. _____ (Maps, tables and relevant documents)

B. _____

TASK ORGANIZATION: (Internal organization for convoy – manifest)

1. SITUATION:

a. Enemy Forces:

(1) Weather. General forecast.

(2) Light Data (EENT, % Illumination, MR, MS, BMNT).

(3) Discuss enemy.

(a) Identification of enemy (if known).

(b) Composition/capabilities/strength/equipment.

(c) Location (hot spots highlighted on map).

b. Friendly Forces:

(1) Operational support provided by higher headquarters.

(a) Helicopter/gunships.

(b) Quick reaction forces (QRFs).

(c) MP escorts/rat patrols.

(d) Fire support elements.

CENTER FOR ARMY LESSONS LEARNED

Element	Location	Frequency/Call Sign

c. Attachments: (From outside the organization)

2. MISSION: (WHO, WHAT, WHEN, WHERE, WHY)

3. EXECUTION:

a. Concept of Movement: (Describes, in general terms, the big picture from start to finish)

b. Tasks to subordinate units (manifest): (Includes attached or OPCON elements)

c. Coordinating Instructions: (Instructions for ALL units)

(1) Order of march (spacing of serials/location of support elements)

(2) Routes (Strip map displayed separately; includes SP, load points, checkpoints, rally points, refuel points, mandatory halts, RONS, traffic control points. Mileage to each

should be indicated.)

(3) Additional movement issues (speed, intervals, lane, parking, accidents, etc.)

(4) Uniform

(5) Actions at danger/hazard areas (SOPs or battle drills to be rehearsed)

(6) Rules of Engagement

4. SERVICE SUPPORT: (Provides the critical logistical information required to sustain the convoy during the operation. Also includes combat service support instructions and arrangements that support the operation.)

a. Ration/Water Plan:

b. Ammunition: (individual/combat loads/tracer mix)

c. Medical: (internal treatment/evacuation procedures other than SOP and external procedures/support)

d. Petrol, Oil, and Lubricants: (internal and external)

e. Maintenance/Recovery: (internal and external)

CENTER FOR ARMY LESSONS LEARNED

f. Remain Over Night (RON) Facilities:

5. COMMAND AND SIGNAL: (states where command and control nodes and key leaders will be located during the operation)

a. Commander(s)/Positioning (manifest):

b. Communications (manifest):

c. Signals: (primary/alternate other than SOP)

d. Reports (individual to higher):

6. SAFETY/RISK MANAGEMENT (Emphasize key risks/control measures)

7. REVIEW TIMELINE (Displayed separately)

8. GIVE TIME HACK

9. ASK FOR QUESTIONS



Uzbekistan
Tajikistan

Uzbekistan

70°E

Sheberghan

Mazar-e Sharif

Gonduz

Fayzabad

Khost

Teleqan

Sar-e Pol

Baghlan

Marykoteh

Pai-a-Khormi

Qalch-yo-Nom

Bamiaz

Charikar

Herat

KABUL

Jalalabad

Ghazni

Gardez

Khost

Farah

Qularam



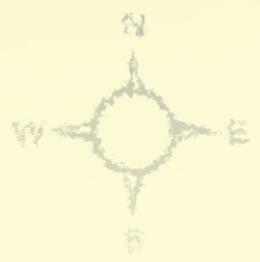
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Zaranj

Lashkar Gah

CENTER FOR ARMY LESSONS LEARNED

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