CHAPTER 6
HEALTH SERVICE SUPPORT IN TACTICAL OPERATIONS

Section I. SUPPORT OF OFFENSIVE OPERATIONS

6-1. Offensive Operations

The offensive is the decisive form of war. It is the method by which wars are won. In combat, US forces will conduct offensive operations, whenever and wherever the opportunity presents. The battalion or battalion TF conducts offensive operations to achieve one or more of the following:

- Defeat enemy forces.
- Secure key or decisive terrain.
- Deprive the enemy of resources.
- Gain information.
- Deceive and divert the enemy.
- Hold the enemy in position.
- Disrupt an enemy attack.

6-2. Types of Offensive Operations

a. Major Types. There are five major types of offensive operations in which the battalion TF participates:

- Movement to contact.
- Hasty attack.
- Deliberate attack.
- Exploitation.
- Pursuit.

b. Task Force Participation. The TF normally participates in these operations as part of a larger force. Commanders at each level—

- Find or create a weak point.
- Suppress enemy fires.
- Isolate the enemy and maneuver against weak points.
- Exploit success.

6-3. Sequence of an Attack

Generally, the following sequence is followed in battalion TF attacks:

a. Reconnaissance. Reconnaissance begins as soon as possible after the TF receives its mission. Information on the avenues of approach, obstacles, and the enemy positions is critical to planning the attack. Reconnaissance continues throughout the attack.

b. Movement to a Line of Departure. When attacking from positions not in contact, units often stage in rear assembly areas. They road march to attack positions behind friendly units in contact with the enemy; conduct a passage of lines, then begin the attack.

c. Maneuver. The TF maneuvers to a position of advantage.

d. Deployment. The TF deploys to assault or to fix the enemy if bypassing.

e. Attack. The enemy position is engaged with fire; assaulted; or bypassed.

f. Consolidation and Reorganization or Continuation. The TF eliminates resistance and prepares for or conducts further operations.

6-4. Forms of Maneuver

a. Types of Attack. Attacks are of two basic types: hasty and deliberate. The two are distinguished primarily by the time available for planning and the extent of preparation. The basic forms of maneuver used in the attack are envelopment, penetration, frontal attack, and infiltration.

Frequently, attacks will use more than one form of maneuver; for example, a penetration that leads to an envelopment.

b. Envelopment. An envelopment is the preferred form of maneuver. In an envelopment, the attacker strikes the enemy's flank or rear. The envelopment causes the enemy to fight in a direction from which he is less prepared. Envelopment requires a weak flank, found primarily by aggressive reconnaissance.

c. Penetration. In the penetration, the battalion concentrates its force to rupture the defense on a narrow front, normally a platoon. The gap created is then widened to pass forces through to defeat the enemy and to seize objectives. A successful penetration depends on surprise and the attacker's ability to suppress enemy weapons; to concentrate forces at the point of attack; and to quickly pass sufficient forces through the gap to destroy the enemy's defense. A penetration is normally attempted when enemy flanks are strong, or when the enemy has a weak or unguarded gap in his defense. To penetrate a well-organized position requires a quick rupture and rapid destruction of the defense's continuity to deny him reaction time. Without rapid penetration, the enemy can reposition forces to block or counter the maneuver.

d. Frontal Attack. The frontal attack is the least preferred form of maneuver. In the frontal attack, the TF uses the most direct routes to strike the enemy. This attack is normally employed when the mission is to fix the enemy in position or deceive him. Although the frontal attack strikes the enemy's front, it does not require that the attacker do soon line or that all subordinate unit attacks be frontal. Frontal attacks, unless in overwhelming strength, are seldom decisive.

e. Infiltration. Infiltration is a form of maneuver where combat elements move by stealth to objectives to the rear of the enemy's position without fighting through prepared defenses. All or part of the TF may move by infiltration. Infiltrations are slow and are often conducted during reduced visibility. Success requires effective reconnaissance to discover and secure undefended routes. Such routes are normally found in rough terrain or in areas difficult to cover with observation and fire. The infiltrating elements avoid detection; however, if detected they avoid decisive engagement.

6-5. Main and Supporting Attacks

In offensive operations, the commander designates main and supporting attacks.

a. Main Attack. The units conducting the main attack are assigned a mission which, when achieved, successfully accomplishes the TF's mission. The main attack secures a key terrain objective (position) or destroys an enemy force. Traditionally, terrain objectives have been assigned to the elements making the main attack; but attacks by fire to destroy an enemy force may also be the main attacker's mission.

b. Supporting Attack. The supporting attack allows the main attack to be successful. The supporting attack contributes to the success of the main attack by accomplishing one or more of the following:

- Occupying terrain to support-by-fire the maneuver of the main attack.
- Fixing the enemy in position.
- Deceiving the enemy as to the location of the main attack.
- Isolating the objective.

6-6. Synchronization of Offensive Operations

The commander and staff synchronize and integrate all combat, CS, and CSS assets that are available. The primary offensive employment of maneuver elements include—

a. Tanks. With their combination of mobility, firepower, and armor protection, tanks are the primary mounted assault element of the TF. Tanks are used to weight the main attack. Tanks may be assigned support-by-fire missions when their direct fires are needed to support assaults; or if obstacles initially prevent them from assaulting the enemy. Normally, tanks are employed in at least platoon strength. When a reserve is formed, tanks are normally allocated to it.

b. Infantry. Mounted infantry is used in the main attack when enemy antiarmor fires are weak or have been suppressed. Because of vulnerability to antiarmor fires, Bradley fighting vehicles (BFVs) are used to over-watch tanks or dismounted infantry when facing more than light antiarmor resistance. Dismounted infantry may lead by infiltration to clear obstacles or key enemy positions and disrupt the enemy's defense. Dismounted infantry can maneuver on untrafficable terrain to attack from an unexpected direction, permitting the resumption of mounted combat. Dismounted infantry may assault along with tanks against strong enemy resistance to protect the tanks from close-range antiarmor weapons. Infantry can also be used extensively in reconnaissance and counter-reconnaissance roles.

c. Antiarmor Company. In the offense, the antiarmor company maneuvers to provide over-watch and support-by-fire. Security and economy of force missions are also appropriate.

d. Scouts. During the offense, the scout platoon is employed in a security or reconnaissance role for the moving force. The primary mission for the scout platoon in the offense is reconnaissance.

e. Attack Helicopters. Attack helicopters may be employed by brigade to provide over-watch; to cover areas ground units cannot cover; or to rapidly mass to provide increased antiarmor capability. When this occurs, coordination is required to ensure synchronized application of combat power.

6-7. Health Service Support of Offensive Operations

a. General. The offensive operations of armored and mechanized forces are characterized by speed, heavy direct and indirect fires, and audacious, independent actions by subordinate elements. The potential for high casualty rates is greater for offensive operations than for any other type of operation. It follows that HSS for offensive operations will be a challenging endeavor. Through detailed planning and realistic training in peacetime, creative methods of supporting offensive operations may be developed. Some facts to consider in planning include—

- The Ml13A3, although an improvement over the A2, cannot match the top speeds of the Ml and the M2/3.
- The need for mobility may preclude the use of company aid posts and will limit BAS capabilities.
- Evacuation lines will lengthen.
- Combat medics may not be able to reach individual casualties in armored vehicles.
- Casualties will be incurred in uneven numbers among the attacking companies/company teams.

b. Health Service Support Guidelines. General guidelines for supporting offensive operations include—

- Pre-position medical evacuation vehicles as far forward as possible prior to the attack.
- Provide additional ambulance teams to main attack companies/teams.
- Request additional ambulances from the FSMC.
- Use patient collecting points.
- Use AXPs.
- Depend on combat lifesavers.
- Operate the BAS as treatment teams, leap frogging them forward as the attack progresses.
- Practice tailgate medicine.
- Concentrate on stabilization care and rapid evacuation.

6-8. Conduct of Offensive Operations

a. General. The remainder of this section discusses the conduct of specific offensive operations. It will provide a brief discussion of HSS

considerations for each operation. As the medical platoon leader, you must be familiar with these operations in order to plan HSS. In a broader sense, however, you should study military tactics in order to be a competent officer and leader.

b. Movement to Contact.

(1) *Battalion task force.* The battalion TF conducts a movement to contact to make or regain contact with the enemy and to develop the situation. Task forces conduct movement to contact independently or as part of a larger force. Normally, the battalion TF is given a movement to contact mission as the lead element of a brigade attack; or as a counterattack element of a brigade or division. Movement to contact terminates with the occupation of an assigned objective or when enemy resistance requires the battalion to deploy and conduct an attack to continue forward movement.

(2) *Organization of battalion task force.* During a movement to contact, the battalion TF is organized with a security force, advance guard, main body, and flank and rear guards. The security force, consisting primarily of the scout platoon, performs a screening and reconnaissance mission across the entire TF frontage. It operates 2 to 6 kilometers ahead of the advance guard. The advance guard usually consists of a company team the composition of which is dependent upon METT-T. It is the initial main effort and operates 1 to 2 kilometers ahead of the main body. The main body contains the bulk of the combat elements and is armed to achieve all-around security. The tactical CP follows the advance guard; the main CP moves behind the lead element of the main body. Flank and rear guards usually are platoon-sized elements under company control.

(3) *Characteristics of movement.* The movement to contact is characterized by a lack of information concerning the enemy's location and/or strength. Units conducting movement to contact are prepared for meeting engagements followed usually by a hasty or deliberate attack.

(4) *Health service support.* To support the movement to contact, medical personnel and evacuation vehicles are positioned within the battalion. One arrangement is to place one combat medic with the scouts; the company and platoon medics with the other elements; two ambulance teams with the advance guard, one with each of the other companies, and the remainder with the treatment teams; split BAS elements into treatment teams with one following the tactical CP behind the advance guard and the other following the main CP in the main body. FSMC ambulances move with the main body. The uncertain y inherent in the movement to contact means the medical platoon must be prepared for any situation. Evacuation routes are planned throughout the axis of advance. Ambulance teams must know the location of the treatment teams at all times. The treatment teams must expect to perform tailgate medicine and facilitate rapid evacuation. The medical platoon must be prepared for a meeting engagement and whatever follows.

c. Hasty Attack.

(1) The hasty attack is conducted either as a result of a meeting engagement or when bypass has not been authorized and the enemy force is in a vulnerable (unprepared or unaware) position. Hasty attacks are initiated and controlled with fragmentation orders (FRAGOs).

(2) There are two categories of hasty attack.

- Attack against a moving force. When two opposing forces converge, the side that wins is normally the one that acts fastest and maneuvers to advantage positions on the opponent's flank. Task force contingency planning and quick reactions on contact facilitate the execution of a hasty attack. The advance guard attacks or defends, depending on the size and disposition of the enemy force. The TF commander maneuvers trailing or adjacent teams against the enemy's flank or rear, while attacking by fire and stopping enemy units attempting to do the same.

- Attack against a stationary force. A hasty attack against a stationary force (composed mainly of individual fighting positions and hasty protective obstacles) is begun after scouts or lead company teams reconnoiter the enemy's positions to find flanks or gaps that can be exploited. This must be done quickly to gain the initiative. The TF coordinates maneuver elements and supporting fires to avoid a piecemeal

commitment of combat power. Dismounted infantry assaults supported by direct and indirect fires may be necessary to defeat the enemy.

(3) Support for the hasty attack incorporates basic principles of HSS to offensive operations. In the hasty attack, little time will be available for planning and preparation. The tactical SOP is the primary guide to HSS operations in this case. Key considerations in support of hasty attacks are—

- Ensure rapid patient evacuation. (Preplan and use your evacuation SOP.)
- Maintain mobility by practicing tailgate medicine.
- Locate BAS/treatment teams near MSRs.

d. Deliberate Attack.

(1) *Characteristics.* Task force deliberate attacks differ from hasty attacks; they are characterized by precise planning based on detailed information, thorough preparation, and rehearsals. Deliberate attacks normally include large volumes of supporting fires, main and supporting attacks, and deceptive measures. The tank or mechanized infantry battalion will normally conduct a deliberate attack as the main or supporting effort of a brigade attack, or as the brigade reserve.

(2) *Health service support.* The deliberate attack is supported through a detailed, coordinated HSSPLAN. Task organize medical assets in support of elements in which high casualty rates are expected. Prepare a detailed overlay indicating current and future treatment team locations, AXPs, and primary and alternate evacuation routes. Inform the FSMC of the situation; request additional assets if necessary; and issue an OPORD to the medical platoon.

e. Exploitation.

(1) *Purpose.* The exploitation is conducted to take advantage of success in battle. Exploitation prevents the enemy from reconstituting an organized defense or conducting an orderly withdrawal. It may follow any successful attack. The TF normally participates in the exploitation as part of a larger force. The keys to successful exploitation are speed in executing and maintaining direct pressure on the enemy.

(2) *Objective.* The TF conducting an exploitation moves rapidly to the enemy's rear area by using movement to contact techniques; they avoid or bypass enemy combat units, then destroy lightly defended and undefended enemy installations and activities. The TF is usually assigned an objective deep in the enemy rear based on the higher commander's intent. This objective may be one that will contribute significantly to the destruction of organized resistance or one for orientation and control.

(3) *Health service support.* In exploitation operations, speed becomes even more important. Medical elements must maintain their mobility; rapid treatment and evacuation are essential. Because an exploitation follows immediately upon a successful attack, medical supplies may become a problem. Ensure that necessary supplies are brought forward in FSMC ambulances. Use FSMC drivers to communicate urgent medical supply needs to the FSMC.

f. Pursuit.

(1) *Purpose.* The pursuit normally follows a successful exploitation. It differs from an exploitation in that a pursuit is oriented primarily on the enemy force rather than on terrain objectives. While a terrain objective may be designated, the enemy force is the primary objective. The purpose of the pursuit is to run the enemy down and destroy him.

(2) *Conduct.* The TF participates in the pursuit as part of a larger force. The pursuit is conducted using a direct-pressure force, an encircling force, and a follow-and-support force. The TF may comprise or be part of any of these forces.

- The direct-pressure force denies the enemy the opportunity to rest, regroup, or resupply by repeated hasty attacks; it forces them to defend without support or to stay on the move. The direct-pressure force envelops, cuts off, destroys, and harasses enemy elements.

- The encircling force moves with all possible speed to get in the enemy's rear, block his escape, and with the direct-pressure force, destroy him. The enveloping force advances along routes parallel to the enemy's line of retreat to establish positions ahead of the him.

- The follow-and-support force is organized to destroy bypassed enemy units; relieve direct-pressure force elements; secure lines of communication; secure key terrain, or guard prisoners or key installations.

(3) *Health service support.* In pursuit operations, support is the same as for exploitation operations.

Section II. SUPPORT OF DEFENSIVE OPERATIONS

6-9. Defensive Operations

The purpose of defense is to defeat the enemy's attack and gain the initiative for offensive operations. Defensive operations achieve one or more of the following:

- Destroy the enemy.
- Weaken enemy forces as a prelude to the offense.
- Cause an enemy attack to fail.
- Gain time.
- Concentrate forces elsewhere.
- Control key or decisive terrain.
- Retain terrain.

6-10. Characteristics of Defensive Operations

a. Preparation.

- The defender has significant advantages over the attacker. In most cases, he not only knows the ground better, but, having occupied it first, he has strengthened his positions. He is stationary and under cover in carefully selected positions, with prepared fires and obstacles.

- An enemy attack is preceded and accompanied by massed supporting fires. To survive, units must use defilade, reverse slope, and hide positions; use supporting and suppressive fires: and avoid easily targeted locations. The defender must use all available time to prepare fighting positions and obstacles; to rehearse counterattacks; and to plan supporting fires and CSS in detail.

b. Disruption. An attacker's strength comes from momentum, mass, and mutual support of maneuver and CS elements. The defender must slow or fix the attack; disrupt the attacker's mass, then break up the mutual support between the attacker's combat and support elements. This results in a piecemeal attack that can be defeated in detail. A general aim is to force the attacker to fight a nonlinear battle; to make the attacker fight in more than one direction. This makes it more difficult for him to coordinate and concentrate forces and fires; and to isolate and overwhelm the defender. It also makes securing his flanks, CS, CSS, and C^2 elements more difficult.

c. Concentration. To gain local superiority in one area, the defender is often forced to economize and accept risks elsewhere. Reconnaissance and security forces enable him to "see" the battlefield, and thereby reduce risk. The defender should be able to rapidly concentrate forces; mass combat power to defeat an attacking force, then disperse and prepare to concentrate again. The main effort is assigned to one subordinate unit. All other elements and assets support and sustain this effort. The commander may shift his focus by assigning a new unit as the main force, if other units encounter unexpected difficulties.

d. Flexibility. The commander designates reserves; deploys forces with logistic resources in depth to ensure continuous operations; and provides

options to the defender if forward positions are penetrated.

6-11. Framework of the Defense

The TF normally defends as part of a larger force. The defensive framework within which corps and divisions organize and fight consist of five elements.

- Deep operations forward of the forward line of own troops.
- Security force operations forward of and to the flanks of the defending force.
- Main battle area operations.
- Reserve operations in support of the main defensive effort.
- Rear operations to retain freedom of action in the rear area.

a. Deep Operations.

- Deep operations are actions against those enemy forces not yet in direct contact with the FLOT. Deep operations create opportunities for offensive action by reducing the enemy's closure rates; separating attacking echelons; disrupting his C,[2] CS, and CSS; and slowing the arrival times of succeeding echelons. Deep operations are conducted using indirect fires, EW, USAF and Army aviation, deception, and maneuver forces.
- Task forces have no deep operations capabilities, although they may be part of a deep maneuver operation.

b. Close Operations.

- The forward security force normally established by corps is called a covering force. It begins the fight against the attacker's leading echelons in the covering force area (CFA). Covering force actions weaken the enemy; permit the corps commander to reposition forces; and deceive the enemy as to the size, location, and strength of the defense.
- A battalion TF may fight as a part of a covering force operation. When it disengages from the enemy, it becomes part of the MBA forces or reserve. Main battle area units assume control of the CFA at the battle handover line; they assist covering force units to break contact and withdraw through the MBA.

c. Main Battle Area Operations.

- Based on their estimate of the situation and intent, brigade commanders assign sectors or battle positions (BPs) to TFs. Normally, assigned sectors coincide with a major avenue of approach, while BPs and attack helicopter firing positions are on the flanks of main approaches. The brigade commander designates and sustains the main effort by giving priority of CS assets to the force responsible for the most dangerous avenue of approach into the MBA. The commander can strengthen the effort on the most dangerous avenue by narrowing the sector of the unit astride it.
- Task force commanders structure their defenses by deploying units in depth within the MBA. A mounted reserve of up to one-half of the TF strength provides additional depth and gives the commander a maneuver capability against the enemy. A commander can create a reserve by taking risk on less likely enemy avenues of approach in the MBA.
- Penetration by enemy forces must be anticipated and provided for in the OPLAN. Separation of adjacent units is likely, especially if the enemy is conducting nuclear, biological, and chemical (NBC) operations. Main battle area forces continue to strike at the enemy's flank, and counterattack across penetrations.

d. Reserve Operations.

- The commitment of reserve forces at the decisive point and time is key to the success of a defense. The TF has been designated as a reserve force; it can expect to receive one or more of the following missions: counterattack; spoiling attack; block, fix, or contain; reinforce; or rear operations.
- When the TF designates a reserve, its most common use is in the counterattack role. The composition, location, and mission of a reserve is based on the TF commander's estimate of the situation and intent.

e. Rear Operations. The battalion TF does not have a rear operations fight within its assigned sector. However, a maneuver battalion assigned a rear mission by a higher headquarters may conduct offensive operations against enemy conventional or unconventional forces in the rear area.

6-12. Sequence of the Defense

A defense will often be conducted in the following sequence:

a. Occupation. During this phase, the scouts are usually the first to clear the proposed defensive position. They check for enemy OPs and NBC contamination. Leaders then reconnoiter and prepare their assigned areas. Security is established forward of the defense area to allow occupation of positions and preparation of obstacles without compromise. During occupation, movement is minimized to avoid enemy observation.

b. Passage of the Covering Force. The TF establishes contact with, and assists the disengagement and passage of the covering force or other security elements.

c. *Defeat of Enemy Reconnaissance, Infiltration, and Preparatory Fires.* Consistent with security requirements, TF elements remain in fortified positions to avoid casualties and shock associated with indirect fires. The enemy will attempt to discover the defensive scheme by reconnaissance and probing attacks of the advance guard. The enemy may also attempt to infiltrate infantry to disrupt the defense or to breach obstacles. Task force security forces must defeat these efforts using maneuver and fires.

d. Approach of the Enemy Main Attack. Task force security elements observe and report enemy approach movement. The TF commander repositions or reorients his forces to mass against the enemy's main effort. Enemy formations are engaged at maximum range by supporting fires and close air support to cause casualties; to slow and disorganize him; to cause him to button up; and to impair his communications. Obstacles are closed. Direct fire weapons are repositioned as required, or maneuvered to attack the enemy from the flank. The TF commander may initially withhold fires to allow the enemy to close into an engagement area. Then at the decisive time, concentrate fires on the enemy.

e. Enemy Assault. As the enemy deploys, he becomes increasingly vulnerable to obstacles. The TF uses a combination of obstacles, blocking positions, and fires to break up the assaulting formation. Continued maneuver to enemy flank and rear is used to destroy him and to increase the number of directions to which he must react. Some security elements may stay in forward positions to monitor enemy second-echelon movement; and to direct supporting fires on these forces as well as on his artillery, AD, supply, and C^2 elements.

f. Counterattack. As the enemy assault is slowed or stopped, the TF commander will launch his counterattack (by fire or by maneuver) to complete the destruction of the enemy forces.

g. Reorganization and Consolidation. The TF must quickly reorganize to continue the defense. Attacks are made to destroy enemy remnants, casualties are evacuated, and units are shifted and reorganized to respond to losses. Ammunition and other critical items are cross-leveled and resupplied. Security and obstacles are reestablished and reports are submitted.

6-13. Types of Defense

The battalion TF will normally use three basic types of defense; defend a sector, defend a BP, and defend a strongpoint. Figure 6-1 summarizes the factors a commander considers in selecting a BP versus a sector.

a. Defense of a Sector.

- A defensive sector is an area designated by boundaries; it defines where a unit operates and the terrain for which it is responsible. Defense in sector is the most common defense mission for the TF.

- Defend in sector is the least restrictive mission. It allows the TF commander to plan and execute his defense using the best

technique to accomplish the mission. He may use sectors, BPs, strongpoints, or a combination of measures to accomplish his mission.

- To control his forces, the TF commander establishes coordinating points; phase lines; on-order BPs; and contact points.

b. Defense of a Battle Position.

- A BP is a general location and orientation of forces on the ground, from which units defend. The BP can be for units from battalion TF to platoon size. A unit assigned a BP is within the general area of the position. Security forces may operate well forward and to the flanks of BPs for early detection of the enemy and for all-around security. Units can maneuver in and outside of the BP as necessary to adjust fires or to seize opportunities for offensive action in compliance with the commander's intent.

- The commander may maneuver his elements freely within the assigned BP. When the commander maneuvers his forces outside the BP, he notifies the next higher commander and coordinates with adjacent units. Task force security, CS, and CSS assets are frequently positioned outside the BP with approval from the headquarters assigning the BP.

c. Defense of a Strongpoint.

- The mission to create and defend a strongpoint implies retention of terrain with the purpose of stopping or redirecting enemy formations. Battalion strongpoints can be established in isolation when tied to restrictive terrain on their flanks. A bypassed strongpoint exposes the enemy's flanks to attacks from friendly forces.

- The TF pays a high cost in manpower, equipment, material, and time for the construction of a strongpoint. It takes several days of dedicated work to construct one. Strongpoints also sacrifice the inherent mobility advantage of heavy forces. Strongpoints mav be on the FEBA. or in depth in the brigade MBA.

FACTOR	BATTLE POSITION	SECTOR
Avenues of approach	Well defined; enemy can be canalized	Multiple avenues prohibit concentration
Terrain	Dominates avenue of approach	Dominating terrain not available
Area of operations	Narrow	Wide
Mutual support between companies	Achievable	Cannot be achieved
Higher commander's ability to control	Good	Degraded

Figure 6-1. Defending from battle positions versus sectors.

6-14. Health Service Support in Battalion Defensive Operations

a. Flexibility in Support. To support a battalion defending in sector requires flexibility in adapting medical assets to the changing tactical situation. A sector defense combines offensive, defensive, and retrograde actions within an overall mobile defense framework. This combination results in a nonlinear front which creates confusion among attacking forces and complicates HSS operations. The nonlinear front means that planned evacuation routes, usable in some sectors, may be blocked by enemy penetration in others. Some defending

elements may become temporarily encircled or bypassed by enemy forces. Rapidly moving enemy units may threaten or over-run the BAS.

b. General.

(1) *Difficulties encountered.* Health service support in the defense is more difficult than in the offense. Casualty rates may be lower, but due to the defensive rearward maneuver, patient collection and evacuation will be more complicated. Combat medics and ambulance teams will be exposed to more direct enemy fires. They will have less time to locate, treat, and evacuate the wounded. Defensive operations will generally produce higher casualty rates among medical personnel, thereby reducing treatment and evacuation capabilities.

(2) *Health service support plan.* The medical platoon should use the defensive preparation time to resupply combat medics and to replace battle losses. The platoon leader and medical operations officer should develop a detailed HSSPLAN. They should contact the FSMC and thoroughly coordinate the HSS relationship. Either the medical platoon leader or the medical operations officer must participate in the TF's battle planning. When planning and coordinating HSS for defensive operations, consider the following actions:

- Select covered and concealed BAS and company aid post sites.
- Ensure adequate medical supplies are available. If necessary, request additional supplies.
- Plan for evacuation within the defensive area.
- Plan and coordinate in detail evacuation by the FSMC from BAS to the DCS.
- Plan to continue HSS should the unit become encircled.
- Consider the potential of having to hold patients for an indefinite period of time, without adequate resources.
- Discuss with the FSMC commander the possibility of positioning a FSMC treatment team within the BP/strongpoint.

(3) *Patient load.* The heaviest patient load can be expected during the initial phase of the enemy attack. Many casualties will be evacuated using nonmedical vehicles during this phase (FM 8-10-6). The BAS, operating as a whole or as separate treatment teams, should be established further rearward than in offensive operations. Evacuation lines will shorten as the forward companies maneuver rearward. Communication difficulties may arise due to enemy jamming. Enemy use of NBC weapons is possible.

(4) *Increased risk.* Health service support to a battalion defending from a BP or a strongpoint is considerably different from that for a sector defense. Battle positions and strongpoints are restrictive measures which limit maneuver. Reduced dispersion will create shorter interval evacuation lines and a more centralized, controlled medical operation. The reduced dispersion also creates increased risk of high casualty rates. Evacuation out of a BP or strongpoint may be difficult or temporarily impossible.

c. Covering Force Support.

(1) *Problem encountered.* Support to a covering force can be extremely complicated. The covering force will most likely face a much larger enemy force. It is expected to trade minimum geographic space for maximum time. To be effective, the covering force must remain highly mobile and avoid decisive engagement. The medical platoon of a covering force unit faces all of the difficulties inherent in defensive operations. Its mission is further complicated by the rapid movement and overpowering number of attacking units.

(2) *Employment.* The medical platoon of a covering force unit will most likely choose to operate its BAS in the split team configuration. It should concentrate on providing expeditious stabilizing care and rapidly evacuating patients. Combat medics and evacuation sections should be employed as for any other defensive operation. When participating in a covering force operation, mobility of the medical platoon is critical.

(3) *Preparation.* Some preparation time may be available prior to enemy contact. During this time, the medical platoon leader meets with the

supporting FSMC commander rider or covering force medical staff officer. A detailed HSSPLAN is prepared. The medical platoon leader must know who is providing evacuation support (a covering force medical company or one from the MBA). Priorities for use of nonmedical vehicles are established with the commander and S3. The medical platoon leader must clearly establish with his unit commander situations under which patients may be abandoned. This information is disseminated so that medical elements can continue to operate without communications and while taking casualties among themselves.

d. Battle Handover.

(1) *Transition.* As the covering force moves to the rear, the TF commander prepares for the battle handover. The handover is the transition from the CFA battle to the MBA battle in which the MBA forces begin to engage the enemy.

(2) *Coordination requirements.* The battle handover can be a hazardous operation and requires extensive coordination. Covering force area forces will have conducted an intense fight and may be considerably attrited. They may require assistance in reaching and passing through MBA forces. In the worst case, handover presents the potential for confusion, disorganization, and resultant high casualty rates within both CFA and MBA elements. The medical platoon must be prepared for this.

(3) *Health service support coordination.* The medical operations officer should contact the CFA battalion/TF medical operations officer to coordinate HSS responsibilities for the battle handover and rearward passage, if possible. If the CFA element has suffered heavy casualties, they may require augmentation of personnel/equipment; if casualties have been light, they may be able to provide the MBA medical platoon with Class VIII supplies or evacuation assistance, as necessary. The medical operations officer should then contact the FSMC and pass on information concerning enemy forces; casualty experience; evacuation routes; requisite site selection; and possibly logistical assistance.

(4) *Operation.* The medical operations officer must stay on top of the tactical situation in order to maneuver treatment teams and evacuation assets. Patient collecting points and AXPs will contribute to HSS efforts. Treatment by CLS and combat medics will be essential. Company medics and evacuation NCOs must be capable of performing independently; this will ensure continuity of HSS under disrupted communications or loss of key medical leaders.

Section III. SUPPORT OF RESERVE OPERATIONS

6-15. Reserve Operations

When designated as a reserve for a higher headquarters, the battalion TF may be assigned one or more of the following missions:

- Counterattack.
- Spoiling attack.
- Block, fix, or contain enemy force.
- Reinforce.
- Rear operations.

Given more than one mission, the TF commander develops, plans, coordinates, and prepares for execution of his contingencies based on established priorities.

6-16. Counterattack

a. *Attack Assignment.* Counterattack planning and execution is assigned by brigade to committed and reserve TFs. Normally, more than one counterattack option is planned for and rehearsed. Counterattacks may be conducted to block an impending penetration of the FEBA; to stop a force that has penetrated; to attack through forward defenses to seize terrain; or to attack enemy forces from the flank and rear.

b. Timing the Attack. A counterattack, at any level, is usually the decisive point in an engagement. The commander's timing in committing his reserve to the counterattack is critical. To ensure success, the counterattack must be well planned and precisely executed. The battalion medical operations officer must be in touch with the tactical scenario and prepared to execute the HSSPLAN.

c. Health Service Support. In preparing and executing the HSSPLAN, consider the following

- Forward movement may be very swift. Medical assets must keep up.
- Ambulance teams should move with supported companies.
- If attack covers a broad frontage, consider splitting BAS into two treatment teams.
- The initial engagement will be violent and decisive.
- The commander may be forced to continue the mission under high casualty rates.
- A successful counterattack will likely result in the capture of EPWs; some EPWs will be in need of medical treatment.
- Consideration for support of offensive operations apply.

NOTE

The Geneva Convention requires that wounded enemy prisoners receive medical care equal to that given to friendly casualties. We will, of course, meet this requirement. However, it is important to remember to search the prisoner and forward any documents found to the S2. For additional information on EPW care, see Appendix H.

6-17. Spoiling Attack

This is a preemptive, limited objective attack aimed at preventing disrupting or delaying the enemy's ability to launch an attack. The objective of the spoiling attack is the enemy force, not terrain. The reserve is often used to conduct spoiling attacks so that forward units can concentrate on defensive preparations within the MBA. Spoiling attacks are normally directed against an enemy force that is preparing to conduct an attack; that has temporarily halted to rearm and refuel; or is making the transition from mounted to dismounted operations. Enemy artillery is also a prime target.

NOTE

Health service support considerations for offensive operations apply.

6-18. Block, Fix, or Contain

The reserve may be ordered to establish a hasty BP to block, fix, or contain enemy forces within a portion of the battlefield. This action may be necessary to blunt a penetration while other forces maneuver against the flanks or rear of the enemy force. An enemy force may be held in one area of the battlefield while he is defeated in another.

NOTE

Health service support considerations for offensive operations apply.

6-19. Reinforce

Reserve forces may be committed to reinforce units that have sustained heavy losses; also to build up stronger defenses in critical areas of the battlefield. Considerations must be given to how they will be integrated into the defensive scheme, C^2 arrangements, and where they will be positioned. The techniques used to reinforce are similar to those used during a relief in place.

6-20. Rear Operations

a. Execution. The reserve battalion may operate as a division combined arms tactical combat force with a rear operations mission. The TF must not allow itself to become so dispersed that it cannot mass for other reserve missions. Nevertheless, the TF normally uses dispersed company positions; this reduces the TF signature on the battlefield and helps spread its companies to accomplish rear operations. The TF completes intelligence preparation of the rear area for probable enemy avenues of approach and for likely enemy landing zones (LZs) and drop zones (DZs). It positions forces at the locations to interdict the rear area threat. Based on the IPB, location of CS and CSS elements within the brigade rear area, and their own dispositions, the TF assigns areas of responsibility to its companies or teams. Task forces are responsible for their own security within assigned areas. The TF also coordinates with CS and CSS base clusters for their defense, to include–

- Critical CS and CSS assets to be protected.
- Intelligence preparation of the battlefield, to include local enemy approaches and possible LZs/DZs.
- Review of base and base cluster defensive preparations to include perimeter defensive sketches, OPs, patrols, obstacles, AD weapons sites, and reaction forces.
- Coordination of fire support.
- Coordination for aviation operations including reconnaissance, fire support, and transport.
- Coordination with MP and other combat-capable units and base cluster reaction forces.
- Events or contingencies that will trigger commitment of the TF to destroy a rear area threat.

b. Health Service Support. The dispersion common to a battalion performing a rear operations mission complicates the HSS situation. Evacuation lines are lengthy. Use AXPs and FSMC or MSMC ambulances, if practical. Company aid posts are vital and must operate somewhat autonomously—company medics must know their business. Due to the dispersion, the BAS may choose to operate as separate treatment teams. Level II support may come from the MSMC in the DSA—if this is a new support relationship it should be well coordinated.

Section IV. SUPPORT OF RETROGRADE OPERATIONS

6-21. Retrograde Operations

Retrograde operations are organized movements away from the enemy. A retrograde may be forced by enemy action or executed voluntarily. The underlying reason for conducting a retrograde operation is to improve a tactical situation or prevent a worse one from occurring. A retrograde operation may be used to economize forces, maintain freedom of maneuver, or avoid decisive combat. A battalion TF conducts a retrograde as part of a larger force to–

- Avoid combat under unfavorable conditions.
- Gain time.
- Reposition or preserve forces.
- Use a force elsewhere.
- Harass, exhaust, resist, and delay the enemy.

- Draw the enemy into an unfavorable position.
- Shorten lines of communication and supply.
- Clear zones for friendly use of chemical or nuclear weapons.
- Conform to the movement of other friendly forces.

6-22. Types

There are three types of retrograde operations: delay, withdrawal, and retirement. They can be characterized as follows:

- Delay—trade space for time and avoid decisive engagement to preserve the force.
- Withdrawal-break contact. (Free a unit for a new mission.)
- Retirement-move a force not in contact to the rear.

6-23. Planning Considerations

All retrogrades are difficult and inherently risky. To succeed, they must be well organized and well executed. A retrograde operation requires the following elements:

a. Leadership and Morale. Maintenance of the offensive spirit is essential among subordinate leaders and troops in a retrograde operation. Movement to the rear may be seen as a defeat or a threat of isolation; therefore, soldiers must have confidence in their leaders and know the purpose of the operation and their role in it.

b. Reconnaissance, Surveillance, and Security. Timely and accurate intelligence is especially vital during retrograde operations. Reconnaissance and surveillance must locate the enemy; then security elements must deny him information and counter his efforts to pursue; outflank; isolate; or bypass all or a portion of the TF. The commander must establish a security force that is strong enough to—

- Secure enemy avenues of approach.
- Deceive the enemy and defeat his intelligence efforts.
- Overwatch retrograding units.
- Provide rear guard, flank security, and choke point security.

c. Mobility. To conduct a successful retrograde, the TF seeks to increase its mobility and significantly slow or halt the enemy.

- The TF improves its mobility by–
  - Reconnoitering routes and BPs.
  - Positioning AD and security forces at critical points.
  - Improving roads, controlling traffic flow, and restricting refugee movement to routes not used by the TF.
  - Rehearsing movements.
  - Evacuating casualties, recoverable supplies, and excess materiel before the operation.
  - Displacing nonessential CSS activities early in the operation.
  - Covering movements by fire.
- The TF degrades the mobility of the enemy by—
  - Occupying and controlling choke points and terrain that dominate high speed avenues of approach.
  - Destroying roads, bridges, and rafting on the avenues not required for friendly forces.
  - Improving existing obstacles and covering them with fire.
  - Employing indirect fire and smoke to degrade the enemy's vision and to slow his

rate of advance. To ensure continuous coverage, TF mortars normally move in split sections.

- Conducting spoiling attacks to keep the enemy off balance and force his deployment.

d. Deception. The objective of deception is to hide the fact that a retrograde is taking place; this is essential for success. Deception is achieved by maintaining normal patterns of activity in radio traffic; artillery fires; patrolling and vehicle movement. Additional considerations include using dummy minefield or decoy positions, and conducting feints and demonstrations under limited visibility conditions. Retrograde plans are never discussed on unsecure radio nets.

e. Conservation of Combat Power. The commander must conserve his combat power by—

- Covertly disengaging and withdrawing less mobile units and nonessential elements before withdrawing the main body.

- Using mobile forces to cover the withdrawal of less mobile forces.

- Using minimum essential forces to provide security for withdrawal of the main body.

6-24. Delay

a. Purpose. A delay is an operation in which a force trades space for time while avoiding decisive engagement. The delay incorporates all of the dynamics of defense, but emphasizes preservation of the force and maintenance of a mobility advantage. The TF may attack, defend, or conduct other actions (such as ambushes and raids) during the delay to destroy the enemy or to slow the enemy. The battalion TF may be given a delay mission as part of the covering force; as an economy-of-force operation to allow offensive operations in another sector; or to control a penetration to set up a counterattack by another force.

b. Control of Actions. A delay may be conducted from successive positions or from alternate positions. Successive positions are used when the delay is conducted over a wide front; alternate positions are preferred for a narrow sector. The delay is normally well planned and uses graphic control measures to display the commander's intent. Incorporate these control measures in the HSS overlay.

c. Health Service Support. Detailed HSS planning is essential to the medical platoon's ability to support a delay operation. The nature of a delay, with its inherent mix of operations (offensive, defensive, and retrograde), creates a complicated battlefield situation. Combat medics, evacuation NCOs, and other key medical personnel must have a good understanding of the commander's intent and the HSSPLAN. This will occur if planning is effective and includes the following considerations implicit in delay operations:

- Expect evacuation difficulty. Patient evacuation in delay operations is complicated due to the changing forward and rearward movement; to possible communication disruptions; and to congested evacuation routes.

- Ambulance crews may be at increased hazard due to the rearward movement of the force.

- Locate BAS further toward the rear.

- Consider operating separate treatment teams to support the successive or alternate positions.

- Plan for possible necessity to abandon patients.

- Plan for frequent BAS relocations.

- Plan for future operations; what happens when the retrograde ends?

6-25. Withdrawal

A withdrawal is an operation in which all or part of the battalion frees itself for a new mission. A withdrawal is conducted to break contact with the enemy when the TF commander finds it necessary to reposition all or part of his force; or when required to attain separation for employment of special purpose weapons. It may be executed at any time, during any type of operation. There are two types of

withdrawals—withdrawal not under enemy pressure and withdrawal under enemy pressure. Both types begin while the battalion is under the threat of enemy interference. Preferably, withdrawal is made while the battalion is not under enemy pressure. Withdrawals are either assisted or unassisted. An assisted withdrawal uses a security force provided by the next higher headquarters in breaking contact with the enemy and to provide overmatching fires. In an unassisted withdrawal, the TF provides its own security force.

6-26. Retirement

a. *Purpose.* A retirement is a retrograde operation in which a force that is not in contact with the enemy moves to the rear in an organized manner. A retirement is usually made at night. If enemy contact is possible, on-order missions are given to the march units.

b. Leadership Responsibilities. A retirement may have an adverse impact on the morale of friendly troops. Leadership must be positive; they must keep troops informed of the retirement purpose and future intentions of the command.

c. *Health Service Support.* Support of a withdrawal or retirement should be conducted much as for a movement to contact. However, in a withdrawal or retirement, most of the medical vehicles are in the rear of the main body. Since these operations are normally conducted as part of a larger force, necessary coordination with the FSMC should be relatively easy.

Section V. SUPPORT OF OTHER TACTICAL OPERATIONS

6-27. Passage of Lines

a. Purpose. A passage of lines is an operation in which one unit is passed through the positions of another. When a unit moves toward the enemy through a stationary unit, it is a forward passage. Rearward passages are movements away from the enemy through friendly units. The covering force withdrawing through the MBA, or an exploiting force moving through the initial attacking force, are examples.

b. Conduct. A passage of lines is necessary when one unit cannot bypass another. A passage of lines may be conducted to–

- Continue an attack or counterattack.
- Envelop an enemy force.
- Pursue a fleeing enemy.
- Withdraw covering forces or main battle forces.

c. Vulnerability of Units. The TF is vulnerable during a passage of lines. As units are concentrated, the fires of the stationary unit may be masked and the TF is not dispersed to react to enemy action. Detailed reconnaissance and coordination are key to ensure a quick and smooth passage.

d. Health Service Support. The passage of lines may offer the medical platoon leader the opportunity to interface with his counterpart in the unit being passed. This is an excellent opportunist y to share information concerning enemy forces; casualty experience; evacuation routes; requisite site selections; and possibly logistical assistance. The passage of lines can be a hazardous operation, particularly when conducted while in contact with the enemy. Health service support must be planned and coordinated between participating units.

6-28. Relief Operations

a. Responsibilities. A relief is an operation in which a unit is replaced in combat by another unit. Responsibilities for the mission and assigned sector or zone of action are assumed by the incoming unit. Reliefs may be conducted during offensive or defensive operations and during any weather or light conditions. They are normally executed during

limited visibility to reduce the possibility of detection.

b. Purpose. The purpose for relief is to maintain the combat effectiveness of committed elements. A relief may be conducted to—

- Reconstitute a unit that has sustained heavy losses.
- Introduce a new unit into combat.
- Rest units that have conducted prolonged operations.
- Decontaminate or provide medical treatment to a unit.
- Conform to a larger tactical plan or make mission changes.

6-29. Breakout from Encirclement

a. Encircled Force. A breakout is an offensive operation conducted by an encircled force. A force is considered encircled when all ground routes of evacuation and reinforcement are cut off by the enemy.

b. Conduct. A breakout is conducted to allow the encircled force to regain freedom of movement; or to regain contact with friendly units. Encirclement does not imply that the battalion TF is surrounded by enemy forces in strength. Threat doctrine stresses momentum and bypassing of forces that cannot be quickly reduced. An enemy force may be able to influence the TF's subsequent operations while occupying only scattered positions; it may not be aware of the TF location, strength, or composition. The TF can take advantage of this by attacking to break out before the enemy is able to take advantage of the situation.

c. Health Service Support. During the breakout, patients will most likely have to be transported by combat units using nonmedical organic assets. Health service support (treatment) will have to be delayed until the breakout is completed.

6-30. Linkup

a. Purpose. A linkup is the meeting of two or more friendly ground forces that have been separated by the enemy. The battalion TF may participate as part of a larger force, or it may conduct a linkup with its own resources. Linkup is conducted to relieve or join a friendly force, or to encircle an enemy force.

b. Coordination of Maneuver Schemes. All elements in a linkup carefully coordinate their operations to minimize the risk of fratricide. This coordination is continuous and increases as the units approach the linkup points. Control measures used are as follows:

- Zones of attack or axes of advance. If one or more of the forces are moving, their direction and objective are controlled by the higher headquarters.
- Phase lines. Movement is controlled by a higher headquarters through the use of phase lines.
- Restrictive fire lines. Restrictive fire lines (RFLs) are used to prevent friendly forces from engaging one another with indirect fires. One technique is to make the phase lines on-order RFLs. As the unit crosses a phase line, the next phase line becomes the RFL.
- Checkpoints. Checkpoints are used to control movement and designate overwatch positions.
- Linkup and alternate linkup points. The linkup point is a designated location where two forces meet and coordinate operations. The point must be easily identifiable on the ground, and recognition signals must be planned. Alternate linkup points are established in the event that enemy action precludes linkup at the primary point.

c. Health Service Support Implications. Tailgate medicine will be employed during linkup movement. Upon linkup, all medical assets will be consolidated into a medical platoon operation.

6-31. Guard Operations

a. Mission. A guard operation is a security operation in which a unit protects a larger unit by—

- Maintaining surveillance.
- Providing early warning.
- Destroying enemy reconnaissance elements.
- Preventing enemy ground observation of main body.
- Preventing enemy use of direct fire against the main body.

b. Functions. The guard force provides the larger force warning, reaction time, and maneuver space. The guard force delays, destroys, or stops the enemy within its capability. The commander conducting the guard operation must know the intent of the higher force commander and the degree of security required.

c. Performance. Guard operations can be to the front, rear, or flanks of the main body. Battalion TFs have the mobility, organization, and equipment to perform a guard operation as a part of a brigade or division offensive operation. They may be assisted by air cavalry or attack helicopter units under their OPCON.

d. Health Service Support. Health service support for offensive operations (paragraph 6-7) equally apply to guard operations.

Section VI. SPECIAL OPERATIONS

6-32. General

Health service support is limited to the same degree as combat effectiveness when operating in areas of extreme weather and/or terrain hazards. Medical units require special purpose equipment (primarily shelter and transportation) in quantities commensurate with their support mission to overcome these restrictions. Operations in freezing or extremely hot temperatures require continuing protection of medical items that deteriorate rapidly. Environmental restrictions may reduce the capability of the division's evacuation assets; therefore, litter bearers and ground/air ambulance elements must be reinforced with other medical and/or nonmedical resources. Medical treatment elements require special shelter protection which neutralizes extremes in weather adapts easily to difficult terrain; and can be erected and dismantled quickly. Unusual types and larger numbers of patients often result from prolonged exposure to extreme natural hazards; therefore, prevention is the most effective method in dealing with extreme conditions. Abnormally high numbers of patients require augmentation of division treatment and/or evacuation resources.

6-33. Mountain Operations

a. The tactical problems of the division medical companies in mountain operations are similar to those encountered in other terrain. Lack of good road networks will add to the difficulties. One DCS should be established in support of each committed brigade. These should be as close as possible to the BAS supported, yet must be situated so as to permit easy evacuation by the units in support. Use of ambulances forward of the DCS may be impossible. Personnel normally employed in this link of evacuation may be used as litter bearers; or they may supervise litter bearers furnished from other sources. Problems will arise, but by maximum use of personnel and equipment, the division medical company can give support within its area of responsibility.

b. Troops operating in mountainous terrain are subject to unusual illnesses; these include mountain sickness, high altitude pulmonary edema, and cerebral edema. All three are caused by rapid ascent to altitudes of 2,400 meters (about 7,875 feet) and above. They can be prevented in most soldiers

by acclimation, progressive ascent, and slow assumption of physical activities. For more detailed information on mountain operations see FM 90-6.

c. Mountain operations require medical personnel to carry additional equipment. Items such as ropes, pitons, piton hammers, and snap links are all necessary for the evacuation of patients and establishment of a BAS. Unnecessary items of equipment including those for which substitutes or improvisations can be made are left behind. Heavy tentage, bulky chests, extra splint sets, excess litters, and non-essential medical supplies should be stored. If stored, these supplies should be readily available for airdrop or other means of transport. Medical items that are subject to freezing must not be exposed to the low temperature experienced in mountainous areas.

d. For forward medical elements to maintain a satisfactory level of medical supplies, all personnel, vehicles, and aircraft going forward should carry small amounts of medical supplies and equipment; examples are blood substitutes, dressings, and blankets. Smaller supplies and equipment may be rolled in blankets and lashed to backboards or carried in partially folded litters.

e. Since the transportation of heavy tentage may be impracticable, shelter for patients must be improvised to prevent undue environmental exposure. In the summer or in warm climates, improvision may not be necessary, but there is a close relationship between extreme cold and shock; thus medical personnel should always consider the need to provide shelter for patients. Shelter may be found in caves, under overhanging cliffs, behind clumps of thick bushes, and in ruins. They may be built using a few saplings, evergreen boughs, shelter halves, or similar items. The time a patient is to be held will influence the type of shelter used. When patients are to be kept overnight, a better weatherproofed shelter must be constructed.

f. The evacuation of patients in mountain warfare presents varied problems. In addition to the task of carrying a patient to the nearest medical element, there is the difficulty of moving over rough terrain.

(1) The proportion of litter cases to ambulatory cases is increased in mountainous terrain; even a slightly wounded individual may find it extremely difficult to move across the terrain. Because of the added exertion and increased pain, it may be necessary to transport a patient by litter who would normally return to the BAS by himself.

(2) In cold weather and in high mountains, speed of evacuation is vital; there is a marked increase in the possibility of shock among patients in extreme cold.

(3) Special consideration must be given to the conservation of manpower. Litter hauls must be kept as short as the tactical situation will permit. A litter team is not capable of carrying a patient for the same distance over mountainous terrain as over flat territory. To decrease the distance of litter hauls, medical elements should locate as close as possible to the troops supported.

(4) It is important to be able to predict the number of patients that can be evacuated with available personnel. It has been demonstrated that when the average terrain grade exceeds 20° to 25° the four-man litter team is no longer efficient; it should be replaced by a six-man team. The average mountain litter team should be capable of climbing 120 to 150 vertical meters of average mountain terrain and return with a patient in approximately one hour.

(5) Another problem is evacuation at night. The wounded should be located and evacuated during the day. Many casualties would not survive the rigors of the night on a mountain in cold weather. Night evacuation over rough terrain is impractical and results are rarely equal to the effort. When possible the night evacuation route should be marked with tracing tape and rope handlines; they are installed during daytime. However, if routes are exposed to enemy observation and fire by day, patients must be removed from the area by night; but only as far as necessary. At the first point affording shelter from enemy observation and fire, a holding station should be established; shelter, warmth, food, and supportive care should be provided. Patients should be brought from forward areas to this point; they are held until daylight, then evacuated to the rear.

(6) Before initiating evacuation, conduct a reconnaissance of the terrain and the road

network in the area. To this, add information on climatic conditions, facilities and personnel available, and the tactical mission. Only after all of these factors are assembled and evaluated can a sound medical evacuation plan be formulated. The following factors peculiar to mountain operations should be considered before making the final selection of evacuation routes:

- Snow and ice are firmest during the early morning hours.
- GIacial or snow fed streams are shallowest during the early morning.
- Mountain streams afford poor routes of evacuation because of rough, slippery rocks and the force of moving water.
- Talus slopes (those slopes with an accumulation of rock debris strewn around) should be avoided; they are difficult to traverse. Loose and slippery rocks on such slopes will often cause litter bearers to fall or drop the patient; compounding his existing injury and possibly causing injury to members of the litter bearer team.
- Choose routes that are just below the crest of a ridge. These trails are usually easiest to follow and the ground affords the best footing.

(7) The difficulties of medical evacuation encountered in mountain operations emphasize the advantages of air evacuation. The time between injury and treatment is a determining factor in the patient's recovery. Evacuation by air, which is the most rapid, most comfortable, and the safest means is the optimum method. However, total reliance on air ambulances is inadvisable; rapidly changing weather conditions in mountainous areas adversely affect aeromedical evacuation. All available means of collection and evacuation should be used.

g. When operating in mountainous terrain, the maneuver battalion is often decentralized to an extent that a centrally located BAS is not practical. In these circumstances, it may be necessary to split the medical platoon into two small sections capable of minimal HSS. Close-terrain conditions severely limit the platoon's capabilities; personnel and equipment augmentation may be required.

h. In mountainous terrain, there is usually adequate concealment and defilade to allow the medical platoon to establish the BAS close to the FLOT. If one station is operated, it should be located as close as possible to the fighting troops, generally in the center of the battalion's area of operations. If the platoon is required to operate more than one treatment site, each treatment team is given a specified area of responsibility; it is located centrally as far forward as possible in support of the troops for which the station is responsible. The term *centrally* located does not necessarily mean the geographical center of an area. Many factors must be considered in determining a central location for a given area. These include expected patient loads; lines of drift; roads or paths for evacuation to and from the station; and terrain features having a direct influence on litter carry. The following advantages are obtained when consideration is given to the location of BAS:

- Relatively short or easy litter hauls.
- Medical facilities closer to the units they support.
- Closer contact with company commanders affords greater ease in following changes in the tactical plan.
- Adequate shelter.

Patients are sorted, given necessary emergency medical care, RTD, or provided shelter and warmth until transportation becomes available.

i. When the BAS is in a split mode, it is desirable that the medical platoon headquarters section be augmented with additional six-man litter teams. The augmentation litter teams may be recruited from all available sources (including the use of indigenous personnel); they must be familiar with military mountaineering techniques. The augmentation should be completed before the actual need.

j. As in normal situations, combat medics will be furnished to the rifle companies by the medical platoon. Insofar as possible, combat medics are always allocated to the same company (and platoon); this encourages close relationship between them and the men of the company. Emphasis should

be placed on training the combat medics in hazards of cold and wind; relationship of these factors to the problem of shock; conservation of body heat and improvised methods of providing warmth (to include the construction of small windbreaks and shelters); and techniques of military mountaineering and mountain evacuation procedures.

k. Supported companies should establish patient collecting points.

(1) In mountainous terrain, it will often be necessary to consider the establishment of patient collecting points. These patient collecting points operated by combat medics are designated intermediate points along the route of evacuation where patients may be gathered. Whenever patients are to be transferred from one type of transportation to another, a patient collecting point/AXP is needed.

(2) Defilade positions are abundant in mountainous areas. Patient collecting points should be established as far forward as possible. An AXP may be established behind each of the BASS, or a centrally located point may be operated; whichever will ensure the most efficient HSS and provide the greatest relief to litter bearer personnel.

(3) Patient collecting points are movable and should be placed, whenever possible, away from difficult terrain. Patient collecting points along routes of march should not be established routinely, unless—

- It is certain that these points will be in territory under secure control of friendly forces.
- The number or severity of wounded justifies such a point.

l. Litter relay points may also have to be established during mountain operations.

(1) If sufficient litter bearers are available, a chain of litter relay points, from the BAS to a point where evacuation can be taken over by ambulances, should be established.

(2) Each relay point should have one NCO and four litter bearers. However, when short of personnel, one NCO could be used to supervise more than one relay point. Each point is responsible for the evacuation of all patients received. When returning to their relay point, litter bearers bring empty litters and other medical supplies which are required by forward medical personnel. This will permit maximum use of available litter bearers; litter bearers operating in a chain of relay points can evacuate far more wounded than teams attempting to evacuate the wounded from the frontline to the BASS; or from the BASS to the ambulance pickup point. Personnel can rest on the return to their post; they also become familiar with the short section of mountain trail over which they travel. This makes it possible for them to operate over the trail at night; also gives the wounded a much smoother ride.

6-34. Jungle Operations

a. Difficult terrain, wide dispersion of combat units, inadequate roads, and insecure lines of communication all have a direct influence on HSS in jungle operations. The manner in which medical units support tactical organizations depends on how they are employed. Wide variations may be expected, but the general principles of HSS will apply.

b. The evacuation of wounded in jungle warfare presents difficult problems. Ambulances may not be practical on trails, unimproved muddy roads, and in swamps. There is a higher proportion of litter cases; even a slightly wounded individual may find it impossible to walk through dense undergrowth. As a result, the patient normally classified as ambulatory may become a litter case. Evacuation is usually along supply routes which are adequately protected against enemy action.

c. The organization of the medical company is such that it will support divisional elements on an area basis. Ambulances may be replaced by other more maneuverable vehicles. Air evacuation may be used to relieve surface transportation. Waterways may afford a good route of evacuation. Army air ambulances equipped with rescue hoists are a fast and efficient means of evacuation in the jungle.

d. There are other problems encountered in jungle operations; personal hygiene and sanitation is a serious and continuous one. as is the incidence of

diseases peculiar to jungle areas. The incidence of fungus diseases of the skin is especially serious. In addition to maintaining high standards of personal hygiene and sanitation, strict preventive medicine measures must be observed and enforced at all times (refer to paragraph 4-19b(4)). For more detailed information on jungle operations see FM 90-5. For management of skin disease, see FM 8-40.

6-35. Cold Weather Operations

a. The environment in cold weather operations is a primary factor. Individuals must understand the effects of the cold environment; they must have the training, stamina, and willpower to take protective actions. In this climate, the human element is all-important; The effectiveness of equipment is greatly reduced; therefore, specialized training and experience are essential. The climate does not allow a margin of error for the individual or the organization. The mobility of units is restricted; their movement must be carefully planned and executed; a movement can be as difficult to overcome as the enemy. Momentum is difficult to achieve and can be quickly lost.

b. With modifications, current Army divisions are suited for operations in cold weather (see FM 31-71). Changes in personnel and equipment authorizations are the result of emphasis on mobility; maintenance; communications; and CSS. Equipment is eliminated or added based on its suitability to the terrain and environment.

c. The conduct of military operations is limited by considerations that are foreign to more temperate regions:

- Long hours of daylight and dust of summer.
- Long nights with bitter cold and storms of winter.
- Mud and morass of the transition periods of spring and autumn.
- Disrupting effects of natural phenomena.
- Scarcity of roads and railroads.
- Vast distances and isolation.
- The lack of maps can adversely affect mobility, firepower, and communications.

In spite of these conditions, operations are accomplished; they require employment of aggressive leadership; a high state of training and full logistical support.

d. Because of the hostility of cold weather, units operating in northern latitudes should establish a relatively short patient holding period. Adverse environmental conditions make it difficult for medical units to provide definitive care over an extended period. The evacuation policy is changed as the tactical situation dictates. The general nature of the terrain makes surface evacuation of patients difficult in winter and virtually impossible in summer. The lack of good evacuation routes and the need to move supplies over the same route greatly restrict patient evacuation. The most practical means of patient evacuation is air evacuation. Aircraft resupplying the area can be used to carry patients on the return trip. Total reliance on air evacuation must be avoided; aircraft operations will be restricted by cold weather conditions.

e. To enhance HSS in extremely cold weather, the following operational principles apply:

(1) Prompt acquisition and evacuation of patients to heated treatment stations.

(2) Augmentation of unit collecting elements by division level medical elements.

(3) Use of enclosed and heated vehicles for medical evacuation.

(4) Provision of heated shelters at frequent intervals along the evacuation route.

(5) Readily available air transportation for patient evacuation.

(6) Special vehicles for surface evacuation of patients.

(7) Heated storage for medical supplies.

f. In the deep snows, storms, and bitter cold of winter, prompt evacuation and treatment of patients is even more essential. It is extremely difficult to find and evacuate patients; early medical care can be rendered only if medical personnel are immediately available. Procedures should be established for medical care on patrols, at strong-points, and in heated aid stations near front lines. If medical personnel are not readily available, other personnel must promptly evacuate patients. Medical treatment elements must be well forward in the combat area to prevent unnecessary losses due to evacuation delays.

6-36. Desert Operations

a. Planning for HSS is especially important in the desert; the greater distances used in maneuver and deployment complicate medical treatment, evacuation, and supply procedures. Roads and trails are scarce and usually connect villages and oases. Wheeled vehicles can travel in any direction over much of the desert; they need not be confined to roads and trails because much of the desert area is flat and hard surfaced. Limited water supplies, coupled with the increased demands created by very high temperatures, low humidity, and dust, cause additional concerns for HSS planners. Use FM 90-3 when preparing HSS plans for desert operations.

b. The greater distances between units limit the availability of combat medics. Medical units should be augmented when possible; also troops should be given additional first aid training before desert operations.

c. The large area over which a battle is fought presents special problems in the timely acquisition, treatment, and evacuation of patients. Any number of patients in a fighting unit may restrict the maneuverability of that unit and jeopardize its mission. Medical units are furnished a greater number of evacuation vehicles for operating in deserts. Medical treatment elements are located farther to the rear in desert operations. Medical evacuation by fixed-wing aircraft and helicopters is valuable because of their speed and the reduced turnaround time.

d. Many diseases of military significance may be found in the desert. The diseases are found in its human inhabitants, animals, arthropods, and local water and food supplies. The cold of the desert night, even in summer, may require warm clothing. Cold weather injuries may occur during the desert winter. It is the desert sunshine, wind, and heat, however, that have the greatest effect upon military operations. The dryness of the desert heat distinguishes it from the heat of the tropics; this adds to the problem of coping with it. Medical elements must be provided additional water supplies to treat heat injuries (heat cramps, heat exhaustion, and heat stroke). All water, except from quartersmaster water points, is considered contaminated and unfit for drinking it may also be unfit for bathing or for washing clothing.

e. Intestinal diseases tend to increase among personnel living in the desert. This may be prevented by good food service sanitation, including supervision of cleaning eating and cooking utensils; supervision of food handlers; disposal of garbage and human wastes; and protection of food and utensils. Solid wastes should be burned when the situation permits. Soakage pits are used to dispose of liquid wastes; they are filled with soil when leaving an area. Deep pit latrines should be used if the soil is suitable. Arthropods and rodents must be controlled to prevent the diseases they carry. Preventive medicine measures include protective clothing; clothing impregnants; arthropod repellents; residual and space sprays; immunizations; and suppressive drugs. Incidence of disease will be reduced by individuals applying preventive medicine measures; practicing good field sanitation and personal hygiene avoiding food and water from native villages; and constant command/ medical supervision.

6-37. River Crossing Operations

a. The river barrier itself exerts decisive influence on the use of HSS units. Attack across a river line creates a medical problem comparable to that of the amphibious assault. Medical elements cross as soon as combat operations permit. Early crossing of treatment elements reduces turnaround time for all crossing equipage which must load patients on the far shore. Maximum use is made of air evacuation assets to prevent excessive patient

buildup in far shore treatment facilities. Near shore treatment facilities are placed as far forward as assault operations and protective considerations permit; this reduces evacuation distances from off-loading points. For more detailed information on river operations, see FM 90-13.

b. In defensive operations, HSS resources deployed on the far shore are restricted to the minimum needed to provide support. Evacuation from far shore treatment facilities is accomplished using both surface and air evacuation; this reduces the accumulation of patients forward of the river barrier. Near shore treatment facilities are located farther to the rear to preclude their having to displace in a cross-river withdrawal. Defilade locations are avoided for medical elements because they are prime target areas for enemy artillery and air attack.

c. Health service support in the attack of river lines, while conforming in general to the HSS doctrine of offensive operations, present special problems during ferrying and bridging operations. Health service support must concern itself with the support of the combat troops during the advance to the river line (preliminary phase); during the river crossing and capture of the initial objective (phase I); during operations to seize the intermediate objective (phase II); and during the attack to gain the bridgehead (phase III).

(1) *Health service support preliminary phase.* There are relatively few patients resulting from this phase when secrecy in movement to the river is maintained. Patient collecting points mayor may not be established along the main approaches to the crossing sites.

(2) *Health service support, phase I.* At the end of the preliminary phase, BAS and DCSs are established to provide normal support in the area of each crossing. Litter bearers may be employed near each crossing site. Ambulances are moved as near to the river as possible. Medical platoons furnish close HSS; combat medics accompany their companies in the crossing. Ambulance squads organic to the medical platoons cross in succeeding waves; and the treatment squad establishes the BAS on the far bank as soon as the situation permits. Patients are placed on returning craft for evacuation to the near bank. When helicopters are employed as a means of air landing assault troops, the returning aircraft may be used to evacuate patients to medical treatment elements on the near bank. Air ambulance elements provide air evacuation of patients from the far bank during phase I if the tactical situation allows air assault operations.

(3) *Health service support, phase II.* During this phase, the FSMC provides evacuation on both banks of the river until a DCS has been established on the far bank. When phase II is nearing completion, the DCS is moved forward to a position close to the near bank or across to the far bank as conditions dictate. A relatively high priority is granted to division HSS elements for movement across any established bridges. In the absence of bridges, movement of HSS elements is accomplished by surface craft or air.

(4) *Health service support, phase III.* During this final phase, HSS units are moved across the river as rapidly as possible; they resume normal operations on the far bank. Division clearing stations may be called upon to care for a larger number of patients, pending the establishment of bridges and the resumption of normal evacuation by higher command.

6-38. Rear Operations and Area Damage Control

a. Rear operations consist of those actions, including area damage control, taken by all units (combat, CS, CSS, and host nation) singly or in combination to secure the force; to neutralize or defeat enemy operations in the rear area; and to ensure freedom of action in deep and close-in operations. It is a system designed to ensure continuous support.

b. Area damage control operations are those measures taken before, during, or after a hostile action or a natural or man - made disaster to minimize its effects.

c. Health service support is provided by division medical companies, medical platoons, and medical sections. These units establish and operate a BAS/DCS on or near the edge of the damage area.

d. See FM 90-14 and FM 3-100 for additional information on area damage control operations.

6-39. Military Operations on Urbanized Terrain

a. General. Throughout history, battles have been fought on urbanized terrain. Some recent examples are the battles for Manila, Stalingrad, Hue, Beirut, and Panama City. Military operations on urbanized terrain (MOUT) are planned and conducted on a terrain where man-made structures impact on the tactical options available to the commander. This terrain is characterized by a three-dimensional battlefield, having considerable rubble; ready-made fortified fighting positions; and an isolating effect on all combat, CS, and CSS units. In this environment, the requirement for a detailed HSSPLAN cannot be overstated. Medical and tactical planners must plan, train, prepare, and equip for patient evacuation from under, at, and above ground level. An additional concern in urbanized terrain is the increased potential for disease transmission due to disruption of utilities (water, sewage, waste disposal), the large numbers of refugees and displaced persons, and breakdowns in sanitation and personal hygiene.

b. Equipment Requirements. Materiel requirements for HSS of MOUT includes unique equipment, especially for the extraction and the evacuation of patients.

- Axes, crowbars, and other tools used to break through barriers.
- Special harnesses, portable block and tackle equipment, grappling hooks, collapsible stretchers and SKED stretchers, lightweight collapsible ladders, heavy gloves, and blankets with shielding for use in lowering patients from buildings or moving them from one building to another at some distance above the ground using ropes and pulleys.
- Equipment for the extraction of patients from tracked vehicles, safe and quick retrieval from craters, basements, sewers, and subways. Patients may have to be extracted from beneath rubble and debris.
- The anticipated increase in wounds and injuries requires increased supplies of intravenous (IV) resuscitation fluids. Individual soldiers may carry these fluids to hasten their availability y and shorten the time between wounding and initiation of vascular volume replacement.
- Air ambulances equipped with a rescue hoist may be able to evacuate patients from the roofs of buildings or may be able to insert needed medical personnel and supplies. The use of SKED stretchers expedites patient hoisting.
- Effective communications face many obstacles during MOUT. Line of sight radios are not effective. Individual soldiers will not have access to radio equipment. Alternate forms of communications, such as markers, panels, or field expedients (fatigue jacket or T-shirt), which can be displayed by wounded or injured soldiers indicating where they are, may be employed.

c. Nonmaterial Requirements.

(1) Patient collecting points should be established at relatively secure areas accessible to both ground and air ambulances. Life- or limb-threatening injured or wounded soldiers should be evacuated by air ambulance, when available. Patient collecting points should be designated in advance of the operation and should—

- Offer cover from enemy fires.
- Be located as far forward as the tactical situation permits.
- Be identified by an unmistakable feature (natural or man-made).
- Allow rapid turnaround of ambulances.

(2) Route markings to the MTF and display of the Geneva Red Cross at the facility must be approved by the tactical commander. Camouflaging the Red Cross can forfeit the protections, for both medical personnel and their patients, afforded under the Geneva Convention. Refer to Appendix H for additional information. The site selected must be accessible, but separated from lucrative enemy targets, as well as civilian hazards such as gas stations or chemical factories.

(3) Medical evacuation in the MOUT environment is a labor-intensive effort. Much of the evacuation effort must be accomplished by litter teams; this is due to rubble, debris, barricades, and destroyed roadways. When this occurs, an ambulance shuttle system or litter shuttle should be established. Medical personnel must be able to use and teach manual carries, as well as improvise as the situation dictates. In moving patients, you should—

- Use covered evacuation routes such as storm water sewers and subways. Sanitary sewers should not be used; there is a danger of methane gas buildup in these systems.
- Use easily identifiable points for navigation and patient collecting points.
- Rest frequently by using a litter shuttle system.

(4) Self-aid, buddy aid, and the CLS skills are essential in this environment. Due to the nature of MOUT, injured and wounded soldiers may not be reached by the combat medic for extensive periods of time. The longer the period between injury or wounding and medical treatment, the poorer the prognosis. Therefore, units operating in this environment must ensure that all soldiers are proficient in self-aid and buddy aid, and that CLS are trained. In paragraph b above, it is recommended that each soldier carry IV resuscitation fluids with him so that the CLS can initiate replacement fluid therapy before the combat medic reaches the casualty. The soldier's chance for survival increases when he begins receiving IV resuscitation fluids early.

d. Ground Evacuation. When using ground evacuation in support of MOUT, the HSS planner must remember that built-up areas have many obstructions to vehicular movement. Factors requiring consideration include—

- Vehicular operations within the urban terrain are complicated and canalized by rubble and other battle damage.
- Bypassed pockets of resistance and ambushes pose a constant threat along evacuation routes.
- Land navigation using tactical maps proves to be difficult. Commercial city maps can aid in establishing evacuation routes, when available.
- Ambulance teams must dismount, search for, and rescue casualties.
- Movement of patients becomes a personnel intensive effort. There are insufficient medical personnel to search for, collect, and treat the wounded. Litter bearers and search teams will be required from supported units, as the tactical situation permits.
- Refugees may hamper movement into and around urban areas.
- Civilian personnel, detainees, and enemy prisoners of war are provided medical treatment in accordance with the command policy and the Geneva Convention.

e. Aeromedical Evacuation. When using aeromedical evacuation assets in support of MOUT, the medical planner must consider enemy AD capabilities and terrain features (both natural and man-made) within and adjacent to the built-up areas.

(1) Factors which may affect the use of air ambulances are—

- Movement is highly restricted and is canalized over secured areas, down wide roads, and open areas.
- Telephone and electrical wire and communications antennas hinder aircraft movement.
- Secure landing zones must be available.
- Landing zones may include buildings with helipads on their roofs or sturdy buildings, such as parking garages.
- Snipers with AD capabilities may occupy upper stories of taller buildings.

(2) Helicopters remain the preferred method of evacuation.

f. Training. In addition to the self-aid, buddy aid, and CLS training, HSS personnel must be familiar with the tactics, techniques, and procedures used by the combat soldier in MOUT.

(1) For HSS personnel to survive and serve in this environment, they must know how to—

- Cross open areas safely.
- Avoid barricades and mines.
- Enter and depart buildings safely.
- Recognize situations where booby traps or ambushes are likely and are advantageous to the enemy.

(2) Many of the techniques used in a mountainous terrain for the extraction and evacuation of patients can be applied to medical evacuation in a MOUT. By using the SKED stretcher, the patient can be secured inside the litter for ease in vertical extractions and evacuations.

(3) Health service support personnel must practice and become proficient in using a grappling hook, scaling walls, and rappelling. Rappelling techniques can be used to gain entry into upper levels of buildings as well as accompanying the patient during vertical extraction and evacuation.

(4) Detailed information on the conduct of combat operations in the urban environment is contained in FM 90-10-1. Additional information on HSS to MOUT is contained in FMs 8-42 and 8-10-6. Health service support planners and providers must be proficient in the skills required for this environment.

Section VII. HEALTH SERVICE SUPPORT IN A NUCLEAR, BIOLOGICAL, CHEMICAL, OR DIRECTED ENERGY ENVIRONMENT

6-40. General

a. On future battlefields, the enemy may employ NBC weapons and directed energy (DE) devices. Chemical, biological, and DE protective measures and procedures to mitigate the effects of nuclear weapons must be included in the medical platoon training programs and daily operations. This section provides guidance for HSS during nuclear warfare, enemy biological or chemical attack, and enemy employment of DE devices. The material presented in this section emphasizes contingency planning for immediate problems confronting HSS units following enemy actions. The large numbers of patients, the loss of MTFs and personnel from NBC attacks, and DE device employment will reduce our capability to provide HSS.

b. Nuclear, biological, chemical, and DE actions create high casualty rates, materiel losses, obstacles to maneuver, and contamination. Mission-oriented protection posture Level 3 and 4 results in body heat buildup, reduces mobility, and degrades visual, touch, and hearing senses. Laser protective eyewear may degrade vision, especially at night. Individual, and ultimately, unit operational effectiveness and productivity are degraded.

c. Contamination is a major problem in providing HSS in an NBC environment. To increase survivability as well as supportability, the medical platoon must take necessary action to avoid NBC contamination. Maximum use must be made of—

- Alarm and detection equipment.
- Unit dispersion.
- Overhead cover, shielding materiels, and collective protective shelters.
- Chemical agent resistant coatings.

Generally, a biological aerosol attack will not significantly impact materiel, terrain, or personnel in the short term. Detailed information on characteristics and soldier dimensions of the nuclear

battlefield; NBC operations; extended operations in contaminated areas: NBC decontamination; NBC contamination avoidance; and NBC protection are contained in Field Manuals 8-285, 8-250, 8-50, 3-100, 3-5, 3-4, and 3-3.

d. On the integrated battlefield HSS is focused on keeping the soldier in the battle. Effective and efficient triage and emergency treatment in the operational area saves lives, assures judicious evacuation, and maximizes the return to duty rate.

6-41. Medical Planning Factors

a. To provide HSS, definitive planning and coordination is required at all levels of command. This includes provisions for treatment, evacuation, and hospitalization. Field Manuals 8-285,8-55, 8-9, and TM 8-215 contain additional information in planning for HSS operations. Higher headquarters must distribute timely plans and directives to subordinate units. Provisions for emergency medical care of civilians, consistent with the military situation, must be included.

b. The medical platoon leader should make a quick appraisal to determine the expected patient load. Consider the use of triage and EMT decision matrices for managing patients in a contaminated environment. A sample decision matrix is shown in Figure 6-2. Training medical personnel in the use of these matrices should enhance their effectiveness in providing HSS.

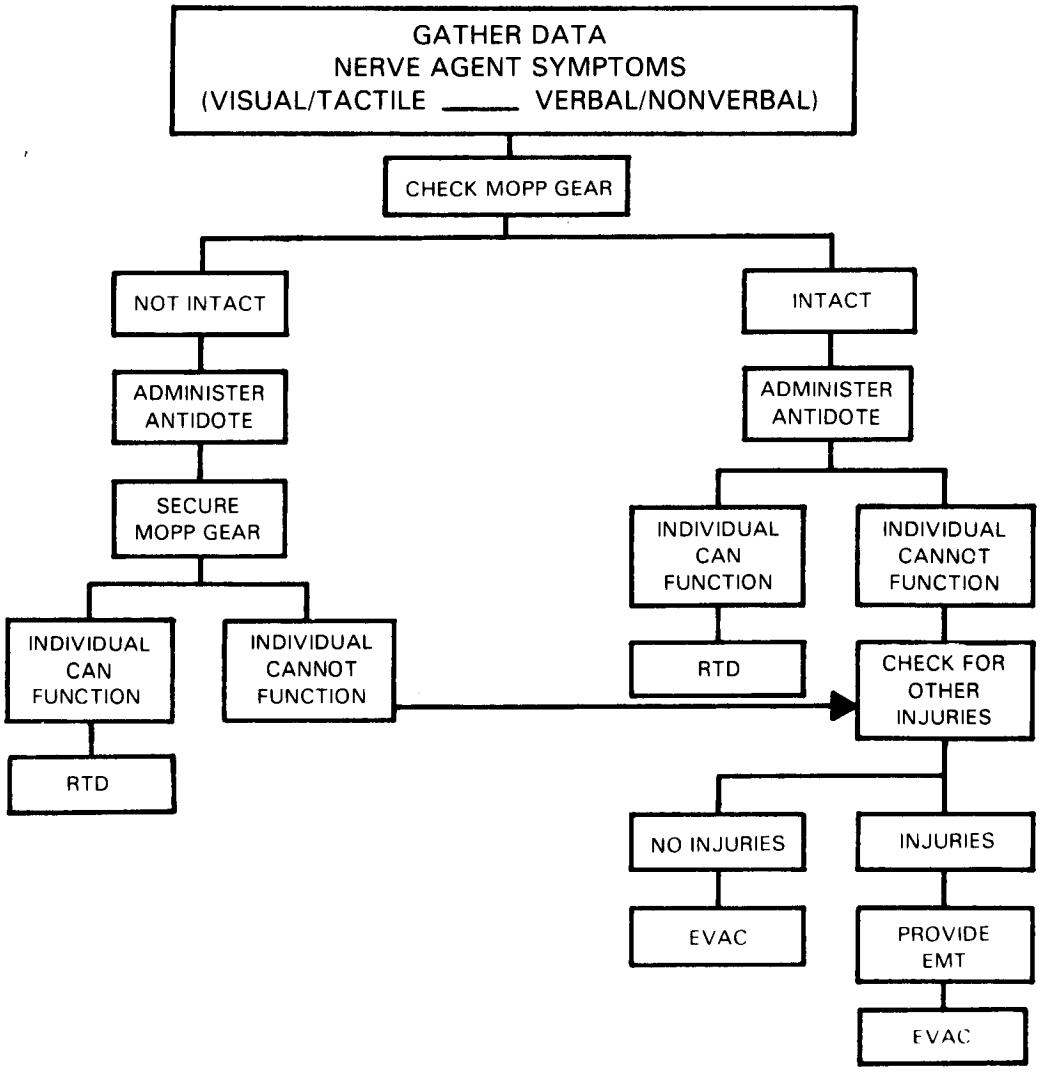

Figure 6-2. Sample triage and EMT decision matrix.

6-42. Logistical Considerations

a. The medical platoon is organized and equipped to provide support in a conventional environment. However, it must be trained and prepared to operate in all battlefield situations. Employment in an NBC environment will necessitate the issue of chemical patient treatment sets, and chemical patient decontamination sets.

b. The DMSO maintains a 48-hour contingency stock level of Class VIII supplies. These medical supplies and equipment must be protected from contamination by chemical agent. Class VIII stocks are dispersed to prevent or reduce damage or contamination caused by NBC weapons. Health service support plans include the protection (NBC hardening) of contingency stocks and the rapid resupply of affected units. Contaminated items are decontaminated prior to issue to using units.

c. The division PVNTMED section is responsible for testing the quality of water for the division. Water from local sources (lakes, ponds, or public water systems) is subject to being contaminated; therefore, it is essential to test the local source for contaminants before use. Frequent retesting by water production personnel is recommended. Once a water source is contaminated, it is marked with appropriate NBC contamination markers. The water is not used until a determination is made that it is safe for use, or water treatment equipment capable of removing the contaminants is employed. When water becomes contaminated, it is disposed of in a manner that prevents secondary contamination; the area is marked. All water dispensing equipment is monitored frequently for possible contamination. Water supply on the NBC battlefield is provided on an area basis by elements of the supply and transportation battalion. Water supply is normally provided to maneuver elements through unit distribution.

6-43. Personnel Considerations

During NBC actions, HSS requirements will increase and medical reinforcement may be necessary. Following an enemy NBC attack, or employment of DE devices, medical personnel will be fully active in providing emergency medical care; they will provide more definitive treatment as time and resources permit. Nonmedical personnel should provide search and rescue of the injured or wounded; provide immediate first aid; and perform decontamination procedures. Nonmedical personnel will be needed to man the patient decontamination station at the BAS (FM 8-285 and TC 8-12). The requirement for nonmedical personnel should be included in the battalion tactical SOP.

6-44. Disposition of Treatment Elements

Site selection factors dictate that the BAS not be located at or near likely target areas. Selecting a covered and concealed site is extremely important in a potential NBC environment.

a. A minimum of eight medical personnel are required to operate a collective protective shelter (CPS) system and provide medical care. One EMT NCO performs triage and EMT on patients before decontamination. One aidman monitors the patient during decontamination procedures. Two aidmen monitor and provide care to patients when they leave the decontamination site. These individuals care for patients awaiting admission to the CPS; they also provide care for RTD or other patients requiring evacuation without receiving treatment in the CPS. One medic operates from the CPS airlock. He removes patient's protective mask and monitors patient's prior to their entering the interior of the CPS. He also assists with treatment in the CPS. The physician and PA operate inside the CPS with the assistance of the airlock aidman and one additional aidman.

b. Operation of CPS systems at the BAS in a chemical environment requires more than four medical personnel. This is why the squad does not split into teams. A viable method of obtaining additional HSS in the area of operations would be to request additional medical teams from the FSMC.

c. The BAS is equipped with two medical equipment sets for chemical agent patient treatment and one medical equipment set for chemical agent patient decontamination. Each set has enough consumable supplies for the decontamination and treatment of sixty chemical agent patients. These sets are also used at clearing stations, corps and COMMZ hospitals, and dispensaries to decontaminate and treat chemical

agent patients. The number of sets vary, depending on the treatment site.

6-45. Civilian Casualties

Civilian casualties may become a problem in populated or built-up areas; the BAS may be required to provide assistance when civilian medical resources cannot handle the workload. Aid to civilians, however, will not be undertaken at the expense of health services for US personnel.

6-46. Nuclear Environment

a. The medical platoon must be capable of supporting the maneuver unit's operations in a nuclear environment. The three damaging effects of a nuclear weapon are blast, thermal radiation (heat and light), and nuclear radiation (principally gamma rays and neutron particles). Well - constructed foxholes with overhead cover and expedient shelters (for example, reinforced concrete structures, basements, railroad tunnels, or trenches) provide good protection from nuclear attacks. Armored vehicles also provide protection against both the blast and radiation effects of nuclear weapons. Casualties generated in a nuclear attack will likely suffer concurrent injuries (for example, a combination of blast, heat, and radiation injuries) which will complicate HSS. Nuclear radiation casualties fall into three categories:

- Irradiated casualty. The irradiated casualty is one who has been exposed to ionizing radiation, but is not contaminated. They are not radioactive, and pose no radiation threat to medical care providers. Casualties who have suffered exposure to initial nuclear radiation will fit into this category.

- Externally contaminated casualty. The externally contaminated casualty has radioactive dust and debris on his clothing, skin, or hair. He presents a "housekeeping" problem to the BAS, similar to the vermin-infested patient arriving at a peacetime MTF. The externally contaminated casualty should be decontaminated at the earliest time consistent with required HSS. Lifesaving care is always rendered, when necessary, before decontamination is accomplished. Radioactive contamination can be monitored with a radiation detection instrument such as the AN/PDR-27 or AN/VDR-2. Removal of the outer clothing will result in greater than ninety-percent decontamination; soap and water can be used to further reduce the contamination levels. A contaminated patient, or even several contaminated patients are unlikely to present a radiation hazard to attending medical personnel.

- Internally contaminated casualty. The internally contaminated casualty is one that has ingested or inhaled radioactive materials, or has had radioactive material injected into the body through an open wound. The radioactive material continues to irradiate the casualty internally until radioactive decay and biological elimination removes the radioactive isotope. Attending medical personnel are shielded, to some degree, by the patient's body. Inhalation, ingestion, or injection of quantities of radioactive material sufficient to present a threat to medical care providers is highly unlikely.

b. Medical units operating in a residual radiation environment will face three problems—

- Immersion of the treatment facility in fallout, necessitating decontamination efforts.

- Casualty production due to gamma radiation.

- Hindrances to evacuation caused by the contaminated environment.

6-47. Medical Triage

Medical triage, as discussed in earlier sections, is the classification of patients, according to the type and seriousness of injury. This achieves the most orderly, timely, and efficient use of medical resources. However, the triage process for nuclear patients is different than for conventional injuries. The four categories for triage of nuclear patients are:

- Immediate treatment group (Tl). Those requiring immediate lifesaving surgery. Procedures should not be time-consuming and concern only

those with a high chance of survival, such as respiratory obstruction and accessible hemorrhage.

- Delayed treatment group (T2). Those needing surgery but whose conditions permit delay without unduly endangering safety. Life -sustaining treatment such as intravenous fluids, antibiotics, splinting, catherization, and relief of pain may be required in this group. Examples are fractured limbs, spinal injuries, and uncomplicated burns.

- Minimal treatment group (T3). Those with relatively minor injuries, such as minor fractures or lacerations, who can be helped by untrained personnel or look after themselves. Buddy care is particularly important in this situation.

- Expectant treatment group (T4). Those with serious or multiple injuries requiring intensive treatment, or with a poor chance of survival. These patients receive appropriate supportive treatment compatible with resources, which will include large doses of analgesics as applicable. Examples are severe head and spinal injuries, widespread burns, or high doses of radiation; this is a temporary category.

The effect of radiation on the triage of patients is shown in Table 6-1.

Table 6-1. Radiation Dosage and Degradation of Treatment Priority

Serial	Starting Priority	Final Priority		
		Less than 150 cGy	150-550 cGy	Over 550 cGy
1	Radiation Only	Duty or T3	T3**	T4
2	T1	T1	T1 or T4*	T4
3	T2	T2	T2 or T4*	T4
4	T3	T3	T3**	T4
5	T4	T4	T4	T4

* In the case of full or partial thickness burns covering more than 18 percent of the body surface or trauma which would either result in significant infection or be categorized as severe but not immediately life threatening, such as a fractured femur. This is a clinical decision and not necessarily subjectively reproducible.

** Includes the probable requirements for antibiotics and transfusion at a later time. So this classification does not suggest that the patient is not in need of treatment, but rather that he does not need immediate specialized care.

6-48. Biological Environment

a. A biological attack (using bomblets, rockets, or spray/vapor dispersal, release of arthropod vectors, and terrorist/insurgent contamination of food and water, frequently without immediate effects on exposed personnel) may be difficult to recognize. The medical platoon must monitor biological warfare indicators such as:

- Increases in disease incidence or fatality rates.
- Sudden presentation of an exotic disease.
- Other sequential epidemiological events.

b. Passive defense measures such as immunizations, good personal hygiene, physical conditioning, using arthropod repellents, wearing protective mask, and good sanitation practices will mitigate the effects of most biological intrusion.

NOTE

Normally, biological agents delivered as a vapor will be nonpersistent.

c. Decontamination of most biologically contaminated patients can be accomplished by bathing with soap and water.

d. Treatment of biological agent patients will require observation and evaluation of the individual to determine necessary medications.

6-49. Chemical Environment

a. Handling chemically contaminated patients may provide the greatest challenge to medical units on the integrated battlefield. All casualties generated in a liquid chemical environment are presumed to be contaminated. Due to the vapor hazard associated with contaminated patients, medical personnel operating BAS and DCS without a collective protective shelter (CPS) system may be required to remain at MOPP level 4 for long periods of time. When CPS systems are not available, clean areas must be located for treating patients.

b. A patient processing station for chemically contaminated patients must be established by the medical platoon to handle the influx of patients (Figure 6-3). Generally, the station is divided by a "hotline" into two major working areas; a contaminated working area situated downwind of a clean working area. Personnel on both sides of the "hotline" assume a MOPP level commensurate with the threat agent employed (normally MOPP 4). The patient processing station should be established in a contamination-free area of the battlefield. When CPS systems are not available, the clean treatment area should be located upwind 30 to 50 meters of the contaminated work area. When personnel in the clean working area are away from the hotline, they may reduce their MOPP level, especially the physician and PA. Chemical monitoring equipment must be used on the clean side of the hotline to detect vapor hazards due to slight shifts in wind currents; if vapors invade the clean work area, medical personnel may have to remask to prevent low level chemical agent exposure and minimize clinical effects (such as miosis).

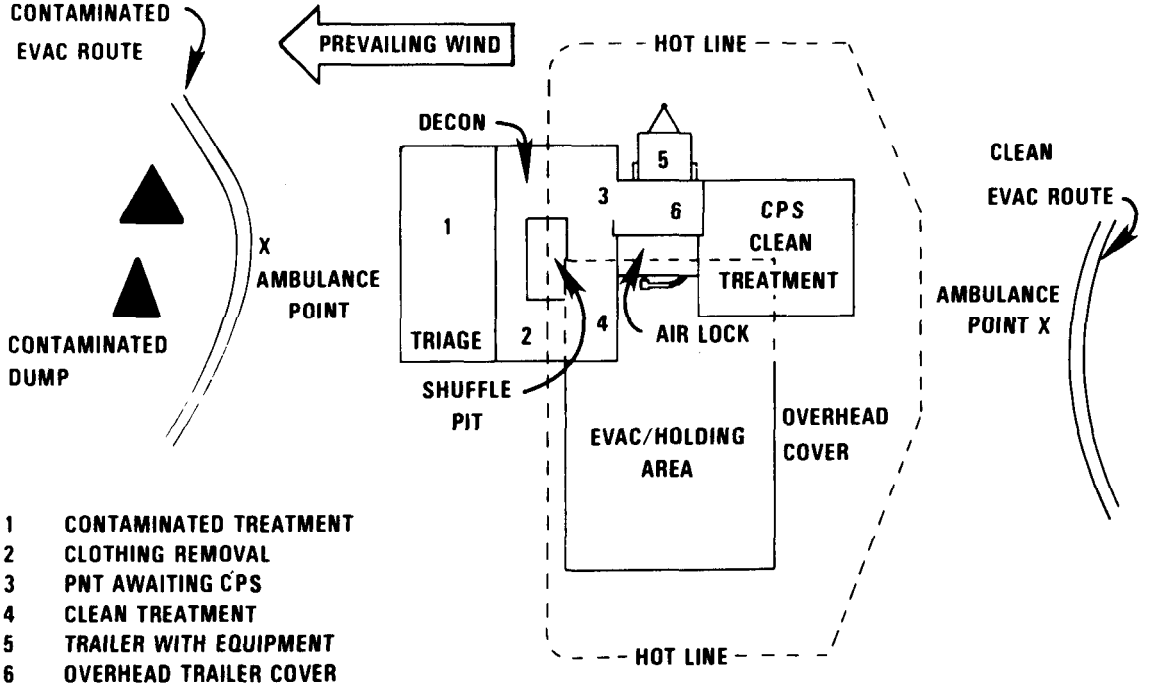

Figure 6-3. BAS patient processing station and protective shelter.

c. Initial triage, emergency medical treatment, and decontamination are accomplished on the "dirty" side of the hotline. Life-sustaining care is rendered, as required, without regard to chemical contamination. Secondary triage, ATM, and patient disposition are accomplished on the clean side of the hotline. When treatment must be provided in a contaminated environment, outside of CPS, the level of care may be reduced to first aid procedures because treaters are in MOPP 3 or 4.

d. Medical platoons will require augmentation with nonmedical personnel to meet patient decontamination requirements created by a chemical attack. This augmentation must come from the supported units. See Appendix E for operating a patient decontamination station.

6-50. Directed Energy Environment

A new dimension on the battlefield of the future will be the employment of directed energy devices. These may be laser, microwave, or radio frequency generated sources. Medical management of casualties from these sources will compound the already overloaded medical treatment resources. Medical management of DE patients at the BAS will consist of evaluation, application of eye ointment, patching, and evacuation. Injuries from microwave and radio frequency sources will be discussed in other publications as data becomes available. Refer to FM 8-50 for additional information on prevention and medical management of laser injuries.

6-51. Special Operations

Possible enemy employment of NBC weapons in the extremes of climate or terrain warrants additional consideration. Consideration must include the peculiarities of urban terrain, mountain, snow and extreme cold, jungle, and desert operations in an NBC environment; also the NBC-related effects upon medical treatment and evacuation. For a more detailed discussion on NBC aspects of urban terrain, mountain, snow and extreme cold, jungle, and desert operations see FM 90-10, FM 90-10-1, FM 90-6, FM 31-71, FM 90-5 and FM 90-3.

a. Mountain Operations. In mountain operations, units may be widely dispersed. Close-terrain may limit concentrations of troops, fewer targets may exist; therefore, a lower patient load may be anticipated. Logistical problems, including medical evacuation, will increase. Health service support resources are spread over a wide area. Mountain passes and gorges may tend to canalize nuclear blast and clouds of chemical and biological agents. Ridges and steep slopes may offer some shielding from thermal radiation effects. Roads and railways may be nonexistent or of limited use, thus restricting movement and complicating patient evacuation. A greater reliance on air ambulance support can be expected.

b. Operations in Snow and Extreme Cold. The effects of extreme cold weather combined with NBC-produced injuries have not been extensively studied. However, with traumatic injuries, cold hastens the progress of shock, providing a less favorable prognosis. Reflection of thermal radiation from snow and ice-covered areas will tend to reinforce the thermal effect. Care must be exercised when moving chemically-contaminated patients into a warm shelter. Chemical contamination on the patient's clothing may be inapparent. When the clothing begins to warm, the chemical agent may begin to vaporize, thereby contaminating the shelter. This effect is known as "off-gassing."

c. Jungle Operations. In rain forests and other jungle environments the overhead canopy will to some extent shield personnel from thermal radiation. It may ignite, however, creating the danger of forest fires and resulting in burn injuries. By eliminating sunlight, the canopy may increase the persistency effect of some chemical agents near ground level. The canopy will also provide a favorable environment for biological agents.

d. Desert Operations. In desert operations, troops may be widely dispersed, thus presenting less profitable targets. However, the lack of cover and concealment will mean that troops are more exposed. Smooth sand is a good reflector of both thermal and blast effects; therefore, these effects will generate an increase in injuries. High desert temperatures will reinforce the discomfort and debilitation of soldiers wearing MOPP.

6-52. Medical Evacuation in an NBCDE Environment

a. An NBCDE environment will force the unit commander to consider to what extent he will

commit evacuation assets to the contaminated area. If the battalion or TF is operating in a contaminated area, most or all of the medical platoon evacuation assets will operate there also. Efforts should be made to keep some ambulances free from contamination.

b. On the modern battlefield we have three basic modes of evacuating casualties (personnel, ground vehicles, and aircraft). Using personnel to physically carry the casualties involves a great deal of inherent stress. Cumbersome MOPP gear, added to climate, increased workloads, and the fatigue of battle, will greatly reduce personnel effectiveness. If evacuation personnel are to be sent into a radiologically contaminated area, operational exposure guidance must be established. Radiation exposure records must be maintained by the battalion NBC NCO and made available to the commander, staff, and medical platoon leader. Based on operational exposure guidance, the commander or medical platoon leader will decide which evacuation elements to send into the contaminated area. Again, every effort is made to limit the number of evacuation assets which are contaminated. Evacuation considerations should include the following:

(1) A number of ambulances will become contaminated in the course of battle. Optimize the use of resources, medical or nonmedical, which are already contaminated before employing uncontaminated resources.

(2) Once a vehicle or aircraft has entered a contaminated area, it is highly unlikely that it can be spared long enough to undergo a complete decontamination. This will depend upon the contaminant, the tempo of the battle, and the resources available to the evacuation unit. Normally, contaminated vehicles (air and ground) will be confined to dirty environments.

(3) Use ground ambulances instead of air ambulances in contaminated areas; they are more plentiful, are easier to decontaminate, and can be replaced more easily. However, this does not preclude the use of aircraft.

(4) The relative positions of the contaminated area, FLOT, and Threat air defense systems will determine where helicopters may be used in the evacuation process. One or more helicopters may be restricted to contaminated areas; with ground vehicles being used to cross the line separating contaminated and clean areas. The ground ambulance proceeds to a decontamination station; the patient is decontaminated; then a clean ground or air ambulance is used, if further evacuation is required. The routes used by ground vehicles to cross between contaminated and clean areas are considered dirty routes and should not be crossed by clean vehicles. The effects of wind and time upon the contaminants must be considered.

(5) The rotorwash of the helicopters must always be kept in mind when evacuating patients, especially in a contaminated environment. The intense winds will disturb the contaminants and further aggravate the condition. The aircraft must be allowed to land and reduce to flat pitch before patients are brought near. This will reduce the effects of the rotorwash. Additionally, a helicopter must not land too close to a decontamination station (especially upwind) because any trace of contaminants in the rotorwash will compromise the decontamination procedure.

c. Hasty decontamination of aircraft and ground vehicles is accomplished to minimize crew exposure. Units should include deliberate decontamination procedures in their SOPS. A sample aircraft decontamination station that may be tailored to a particular unit's needs is provided in FM 1-102 and FM 3-5.

d. Evacuation of patients must continue, even in an NBC environment. The medical platoon leader must recognize the constraints NBC operations place upon him; then plan and train to overcome these deficiencies.

NOTE

The key to mission success is detailed preplanning. A HSSPLAN must be prepared for each support mission. Ensure that the HSSPLAN is in concert with the tactical plan. Use the plan as a starting point and improve on it while providing HSS.