

## CLOSE QUARTERS COMBAT TECHNIQUES

*A large portion of combat in built-up areas takes place at very close quarters, often between small groups of combatants within the confines of a single room. Because of this, individual combat actions can flare up quickly and be over in a matter of seconds. Success or failure is often determined by life or death decisions made and actions taken almost instinctively by individual soldiers and small teams as they encounter differing complex situations in each new room. One of the complexities often encountered particularly during OOTW, is the intermixing of combatants with noncombatants in the same building, often in the same rooms. Employing close quarters combat techniques is often the most effective means of achieving victory while minimizing friendly losses, avoiding unnecessary noncombatant casualties, and conserving ammunition and demolitions for subsequent operations.*

### **K-1. BATTLE DRILLS AND CLOSE QUARTERS COMBAT**

Close quarters combat techniques do not replace battle drills. They are techniques to be used when the tactical situation calls for room-by-room clearing of a relatively intact building in which enemy combatants and noncombatants may be intermixed. These techniques involve increased risk in order to clear a building methodically, rather than using overwhelming firepower to neutralize all its inhabitants. Certain close quarters combat techniques, such as methods of movement, firing stances, weapon positioning, and reflexive shooting, are useful for all combat in confined areas. Other techniques, such as entering a room without first neutralizing known enemy occupants, are appropriate in only some tactical situations. Generally, if a room or building is occupied by an alerted enemy force that is determined to resist, and if most or all noncombatants are clear, overwhelming firepower should be employed to avoid friendly casualties. In such a situation, supporting fires, demolitions, and fragmentation grenades should be used to neutralize a space before friendly troops enter. In some combat situations, however, the use of heavy supporting fires and demolitions would cause unacceptable collateral damage. In other situations, often during OOTW, enemy combatants are so intermixed with noncombatants that US forces cannot in good conscience use all their available supporting fires, and room-by-room clearing may be necessary. At such times, close quarters combat techniques are most appropriate.

### **K-2. PRINCIPLES OF CLOSE QUARTERS COMBAT**

As in all other military operations, battles that occur at close quarters, such as within a room or hallway, must be planned and executed with care. Units must

train, practice, and rehearse close quarters combat techniques until each fire team and squad operates smoothly as a team. Each member of the unit must understand the principles of close quarters combat and the part his actions play in their successful execution. The principles of close quarters combat are *surprise, speed, and controlled violent action*.

a. *Surprise* is the key to a successful assault at close quarters. The fire team or squad clearing the room must achieve surprise, if only for seconds, by deceiving, distracting, or startling the enemy. Sometimes stun or flash grenades may be used to achieve surprise. These are more effective against a nonalert, poorly trained enemy than against alert, well-trained soldiers.

b. *Speed* provides a measure of security to the clearing unit. Speed lets soldiers use the first few vital seconds provided by surprise to their maximum advantage. In close quarters combat, speed does not mean incautious haste. It can best be described as “carefull hurry.”

c. *Controlled violent action* eliminates or neutralizes the enemy while giving him the least chance of inflicting friendly casualties. Controlled violent action is not limited to the application of firepower only. It also involves a soldier mind-set of complete domination.

Each of the principles of close quarters combat has a synergistic relationship to the others. Controlled violence coupled with speed increases surprise. Hence, successful surprise allows increased speed.

### **K-3. FUNDAMENTALS OF CLOSE QUARTERS COMBAT**

The ten fundamentals of close quarters combat address actions soldiers take while moving along confined corridors to the room to be cleared, while preparing to enter the room, during room entry and target engagement, and after contact. Team members must—

a. Move tactically and silently while securing the corridors to the room to be cleared. Carry only the minimum amount of equipment. Rucksacks and loose items carried by soldiers fire them and slow their pace, and cause noise.

b. Arrive undetected at the entry to the room in the correct order of entrance, prepared to enter on a single command.

c. Enter quickly and dominate the room. Move immediately to positions that allow complete control of the room and provide unobstructed fields of fire.

d. Eliminate all enemy within the room by the use of fast, accurate, and discriminating fires.

e. Gain and maintain immediate control of the situation and all personnel in the room.

f. Confirm whether enemy casualties are wounded or dead. Disarm and segregate the wounded. Search all enemy casualties.

g. Immediately perform a cursory search of the room. Determine if a detailed search is required.

h. Evacuate all wounded and any friendly dead.

- i. Mark the room as cleared, using a simple, clearly identifiable marking in accordance with the unit SOP.
- j. Maintain security at all times and be prepared to react to more enemy contact at any moment. Do not neglect rear security.

#### **K-4. INITIAL ACTIONS TO CLEAR A BUILDING**

The initial actions to clear a building are no different during close quarters combat than during any other MOUT.

- a. The unit isolates the building using direct or indirect fires before the lead element moves to the breach point. The unit—
  - (1) Covers mounted avenues of approach with anti armor weapons.
  - (2) Covers dismounted avenues of approach with automatic weapons.
- b. The unit suppresses enemy fires and neutralizes suspected and likely enemy positions as the breach and clearing teams move into position. The unit obscures the movement of the breach and clearing teams to the building by using smoke.
- c. Breach and clearing teams secure a foothold in the building. Teams move along covered and concealed routes and enter at the highest possible level of the building. The unit shifts fires to other floors or buildings as the clearing teams enter. If possible, clearing teams clear hallways and rooms from the top of the building down.

#### **K-5. COMPOSITION OF THE CLEARING TEAM**

Close quarters combat clearing techniques are designed to be executed by the standard four-man fire team. Because of the confined spaces typical of building- and room-clearing operations, units larger than squads quickly become unwieldy. When shortages of personnel demand it, room-clearing operations can be conducted by two- and three-man teams, but four-man teams are optimum. Using fewer personnel greatly increases the combat strain and the risks to the participants.

#### **K-6. BREACHING**

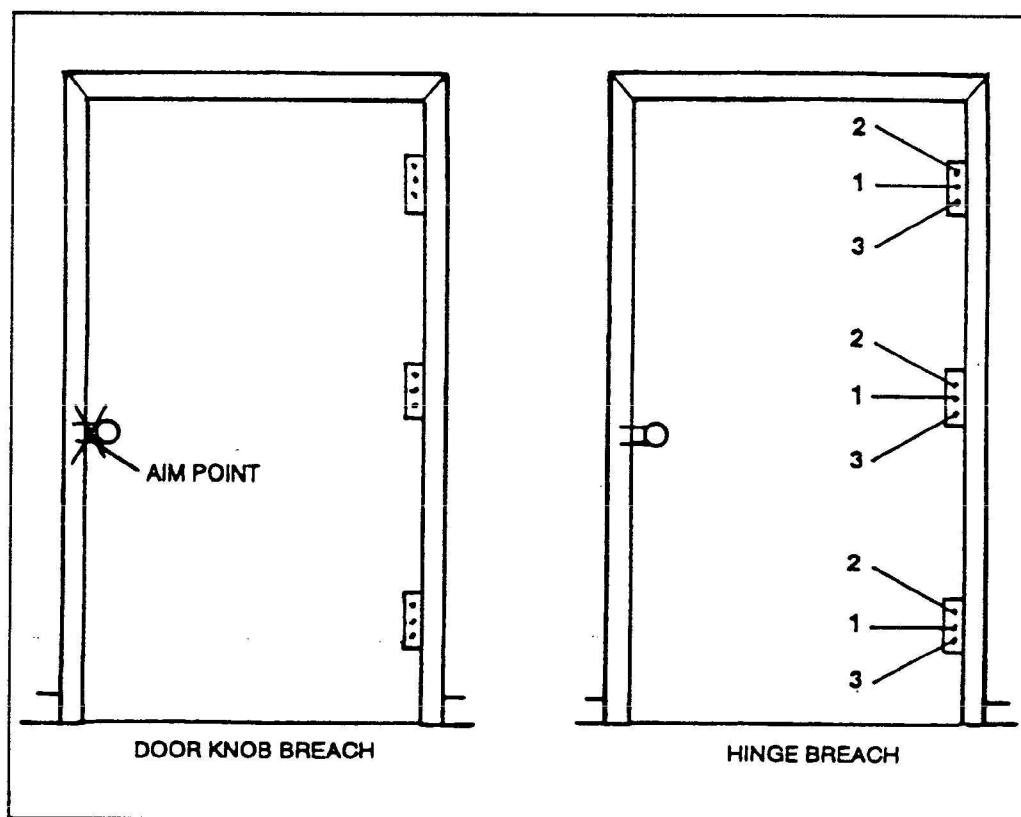
An integral part of close quarters combat is the ability to gain access quickly to the room to be cleared. Breaching techniques vary widely based on the type of construction encountered and the types of munitions available to the breaching force. Techniques range from simple mechanical breaching to complex, specialized demolitions.

- a. A simple method of breaching is the *shotgun ballistic breach* for forced entry of standard doors. A 12-gauge shotgun loaded with buckshot or slugs can be used to breach most standard doors quickly. When done properly, the shotgun breach requires only a few seconds. The two standard shotgun breaching techniques are the *doorknob breach* and the *hinge breach*. When attempting either technique, the gunner approaches the door from an angle, avoiding standing in the area directly in front of the door. While holding the

stock of the shotgun in the pocket of his shoulder, the gunner places the muzzle tightly against the door, aiming down at a 45-degree angle.

(1) For the doorknob breach, the aim point is a spot halfway between the doorknob and the frame, not at the doorknob itself. The gunner fires two quick shots in the same location, ensuring that the second shot is aimed as carefully as the first. Weak locks may fly apart with the first shot, but the gunner should always fire twice. Some locks that appear to be blown apart have parts still connected that will delay entry. If the lock is not defeated by the second shot, the gunner repeats the procedure.

(2) The hinge breach technique is performed much the same as the doorknob breach, except the gunner aims at the hinges. He fires three shots per hinge—the first at the middle, then at the top and bottom (Figure K-1). He fires all shots from less than an inch away from the hinge. Because the hinges are often hidden from view, the hinge breach is more difficult.



**Figure K-1. Aim points for shotgun breach of a standard door.**

Regardless of which technique the gunner uses, immediately after he fires, he kicks the door in or pulls it out. He then pulls the shotgun barrel sharply upward and quickly turns away from the doorway to signal that the breach point has been cleared. This rapid clearing of the doorway allows the following man in the fire team a clear shot at any enemy who may be blocking the immediate breach site.

b. Demolitions are often needed to defeat more elaborate barriers or to produce a desired effect to aid the initial entry. See Appendix L for a discussion of expedient demolitions for breaching common urban barriers.

c. Mechanical breaching is not addressed here, but it is an assumed capability within all units. Whether or not to take the time to defeat weak barriers, such as doors or windows, by means of crowbars, saws, sledgehammers, or axes is a decision that must be made based on the conditions of METT-T. Mechanical breaching should always be planned as a backup to a ballistic or explosive breach.

## K-7. BREACH POINT

Clearing team members must approach the breach point quickly, quietly, and in standard order. This approach preserves the element of surprise and allows for quick entry and domination of the room.

a. The order of movement to the breach point is determined by the method of breach and the intended actions at the breach point. The members of the fire team are assigned numbers 1 through 4, with the team leader always designated number 3. If one member of the clearing team is armed with the SAW rather than an M16 rifle or carbine, he should be designated number 4.

(1) The order of movement for a shotgun breach has the shotgunner up front, followed by the number 1 man, number 2 man, and then the number 3 man (team leader). After the door is breached, the shotgunner falls to the rear of the lineup and acts as the number 4 man.

(2) The order of movement for a demolition breach is number 3 (team leader), number 2, number 1, and then number 4. The team leader provides security at the doorway. The number 2 man carries the demolition charge and places it. Number 1 carries a fabricated blast shield. Number 4 provides rear security. After the demolition charge is placed, number 2 falls in behind number 1 (with the blast shield), and number 3 (team leader) falls in behind number 2, re-forming the standard 1, 2, 3, 4 configuration.

(3) If neither a shotgun nor a demolitions breach is required, the order of movement is the standard 1, 2, 3, 4 configuration.

b. The clearing team must always be alert. Team members provide security at the breach point and to the rear, laterally down corridors, and upward if near stairs or landings. The two basic techniques for moving down hallways are shown in Figure K-2. Hallway intersections are dangerous areas and should be approached cautiously as shown in Figures K-3 and K-4.

(1) The *serpentine technique* is used in narrow hallways. The number 1 man provides security to the front. His sector of fire includes any enemy soldiers who appear at the far end of the hall or from any doorways near the end. The number 2 and number 3 men cover the left and right sides of the number 1 man. Their sectors of fire include any soldiers who appear suddenly from nearby doorways on either side of the hall. They cover the number 1 man's flanks. The number 4 man, normally carrying the SAW, provides rear protection against any enemy soldiers suddenly appearing behind the clearing team.

(2) The *rolling-T technique* is used in wide hallways. The number 1 and number 2 men move abreast, covering the opposite side of the hallway from the one they are walking on. The number 3 man covers the far end of the hallway from a position behind the number 1 and number 2 men, firing between them. Once again, the number 4 man provides rear security.

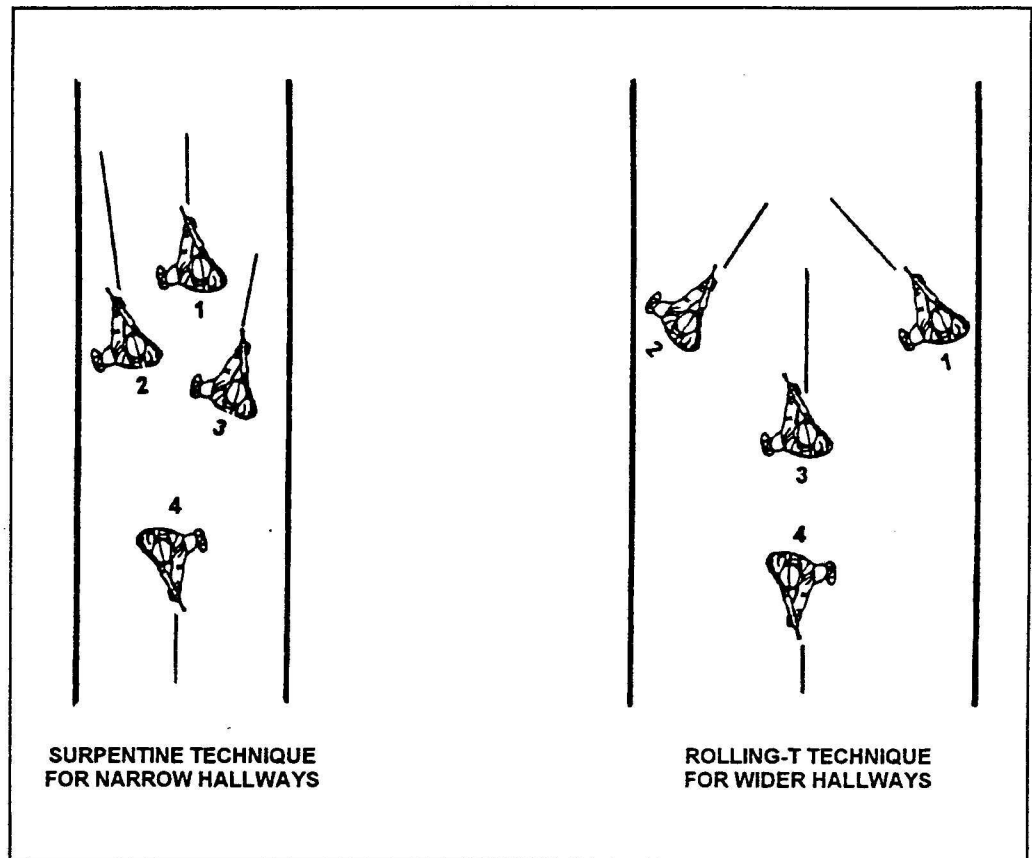


Figure K-2. Hallway clearing techniques.

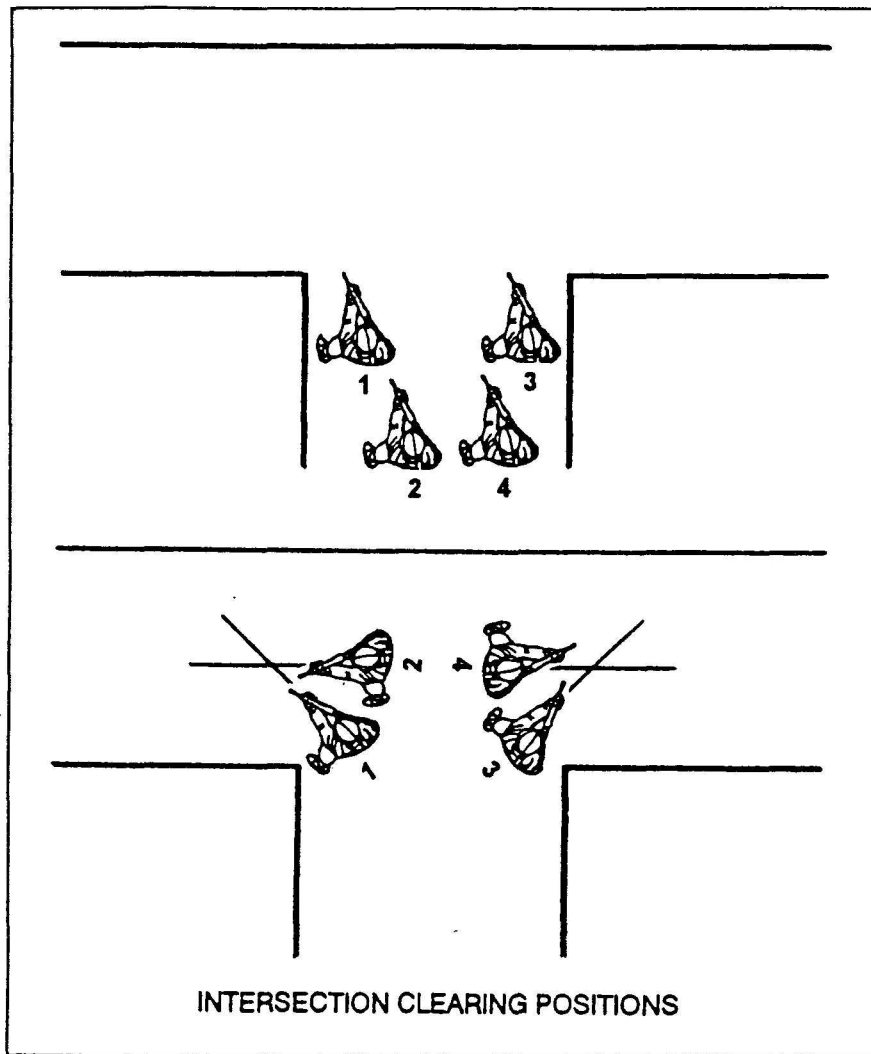


Figure K-3. T-shaped hallway intersection clearing positions.

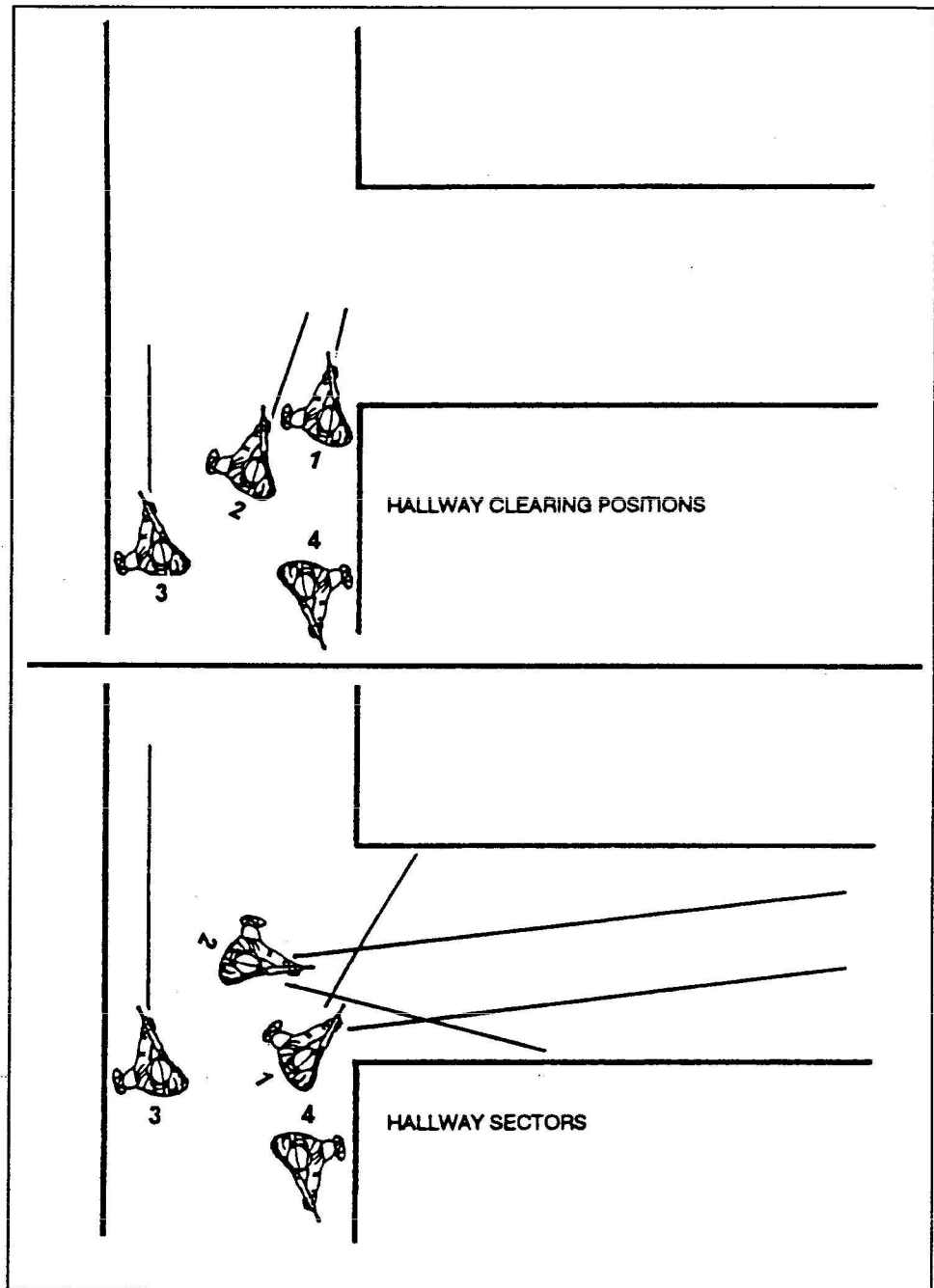


Figure K-4. Hallway intersection clearing positions and sectors of fire.

### K-8. INDIVIDUAL MOVEMENT AND WEAPONS CONTROL

As in all combat situations, the clearing team must move tactically and safely. Individuals who are part of a clearing team must move in a standard manner, using practiced techniques known to all.



a. When moving, team members hold their weapons with the muzzle pointed in the direction of travel. They keep the butt of the rifle in the pocket of their shoulder, with the muzzle slightly down to allow for unobstructed vision. Soldiers keep both eyes open and swing the muzzle with their head so that the rifle is always aimed where the soldier is looking.

b. Team members avoid "flagging," or leading, with the weapon when working around windows, doors, comers, or areas where obstacles must be negotiated. Flagging the weapon gives advance warning to anyone looking in the soldier's direction, making it easier for an enemy to grab the weapon. Soldiers must keep their weapons under control at all times.

c. Team members should keep weapons safe (selector switch on SAFE and index finger outside of trigger guard) until a hostile target is identified and engaged. After a team member clears his sector of all targets, he returns his weapon to the SAFE position.

d. If a soldier has a malfunction with his weapon during close quarters combat, he should immediately drop to one knee and conduct immediate action to reduce the malfunction. Once the weapon is operational, there is no need to return to the standing position to engage targets unless the soldier must move to another firing position. Valuable time is saved by resuming target engagement from the kneeling position. When other members of the team see a soldier drop to one knee, they know immediately that he has a malfunction and that they should engage targets in his sector.

#### **K-9. ACTIONS OUTSIDE THE POINT OF ENTRY**

Actions outside the point of entry must be quick and well rehearsed. The doorway or breach point is a dangerous position. The clearing team is focused on entry and could be surprised by an enemy appearing unexpectedly in the corridor.

a. Clearing team members' positions relative to the door are important as are their weapons' carry positions. Team members stand as close to the entry point as possible, staying in a crouched position. They hold their weapons either in the high-carry or the low-carry position. They ensure the muzzle is not pointed at another team member.

b. All team members must signal one another that they are prepared before the team enters the room. The last man taps or squeezes the arm of the man in front of him, and each one passes this signal along. Team members avoid the use of a verbal signal, which may alert the enemy and destroy the element of surprise.

c. All individual equipment that is carried must be selected carefully and prepared properly to ensure that it is quiet and not cumbersome. Essential items only should be carried during close quarters combat. Protective vests and helmets should be worn by all team members. Additional protective equipment, such as gloves, kneepads, or goggles, may be worn, depending on the situation and the unit's level of training.

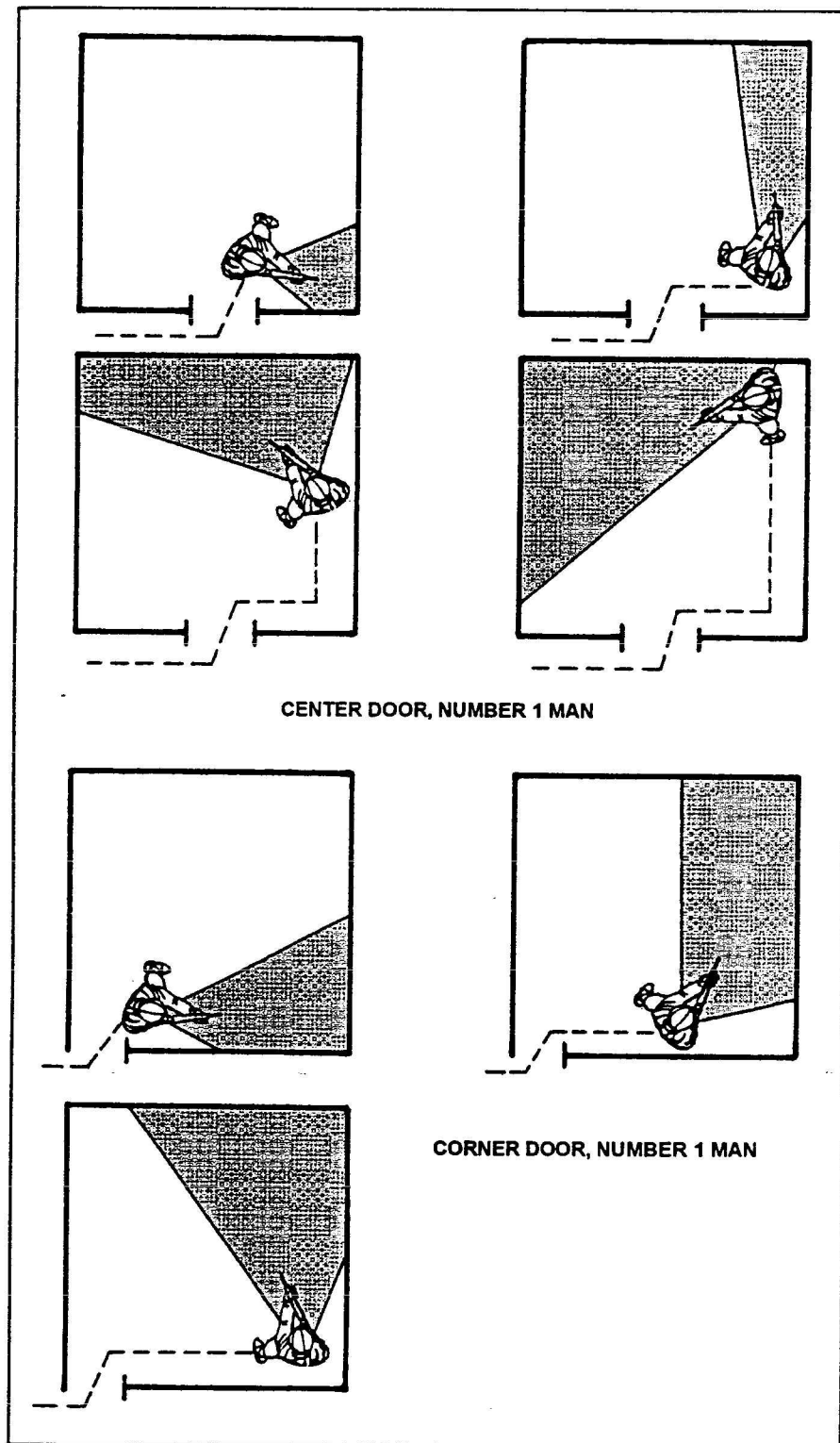


Figure K-5. Path of #1 man center door and corner door.

## K-10. ACTIONS UPON ENTRY

The entire team should enter the room as quickly and as smoothly as possible and clear the doorway immediately.

a. The door is the focal point of anyone in the room. It is known as the "fatal funnel," because it focuses attention at the precise point where the individual team members are the most vulnerable. Moving into the room quickly reduces the chance that anyone will be hit by enemy fire directed at the doorway. The sequence of movements described below is shown in Figures K-5 through K-14.

b. On the signal to go, the clearing team moves through the door quickly and takes up positions inside the room that allow it to completely dominate the room and eliminate the threat. Team members stop movement only after they have cleared the door and reached their designated point of domination.

(1) The first man to enter moves in as straight a line as possible toward the corner for which he is responsible. He may then turn and move deep into the far corner of the room. The depth of his movement is determined by the size of the room, any obstacles in the room such as furniture, and by the number and location of enemy and noncombatants in the room (Figure K-5).

(2) The second man enters and moves toward the corner

in the opposite direction, following the wall, but not directly against it (Figure K-6)

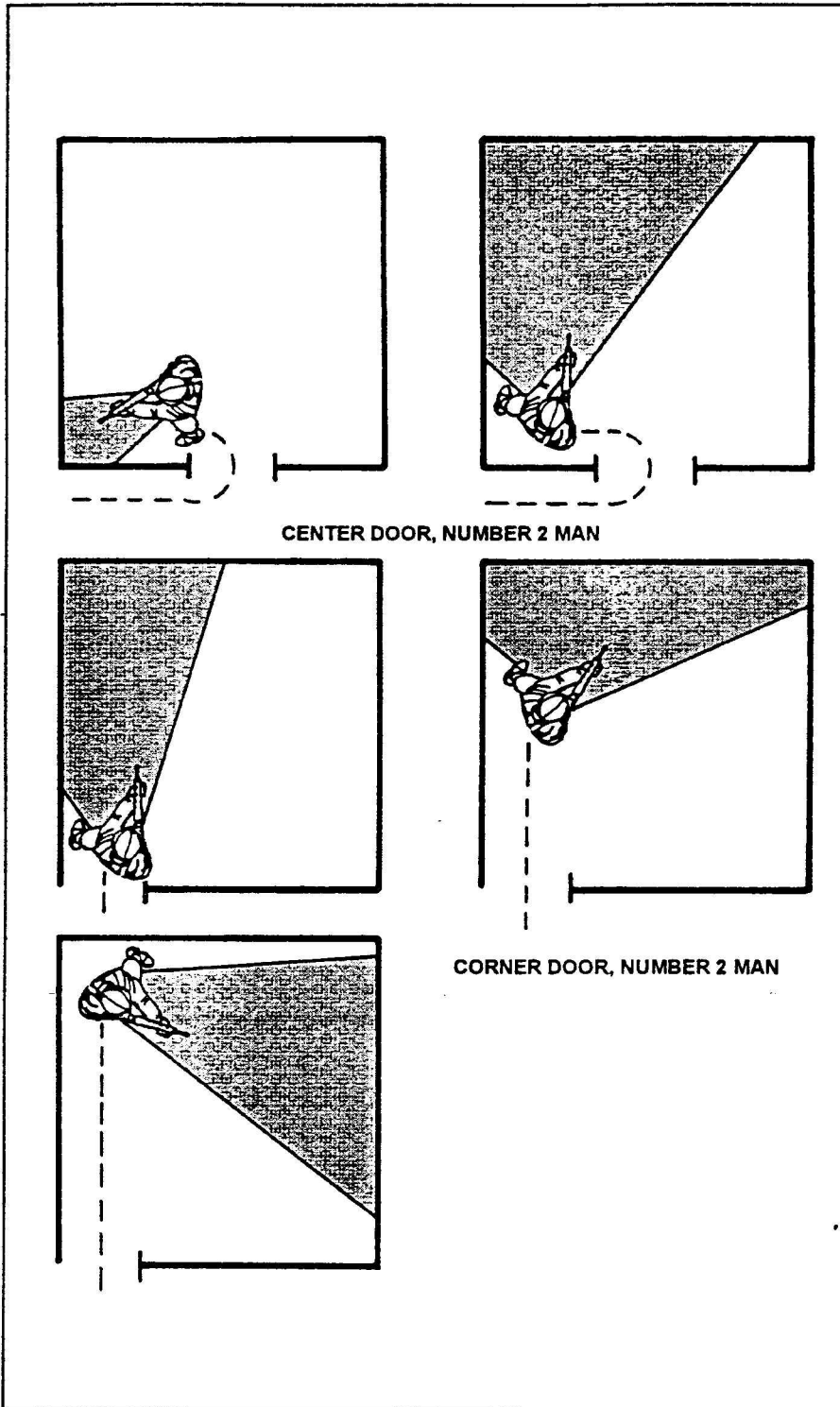


Figure K-6. Path of #2 man, center door and corner door.

(3) The number 3 man (team leader) buttonhooks inside the room at least 1 meter from the door, but between the number 1 man and the door (Figure K-7).

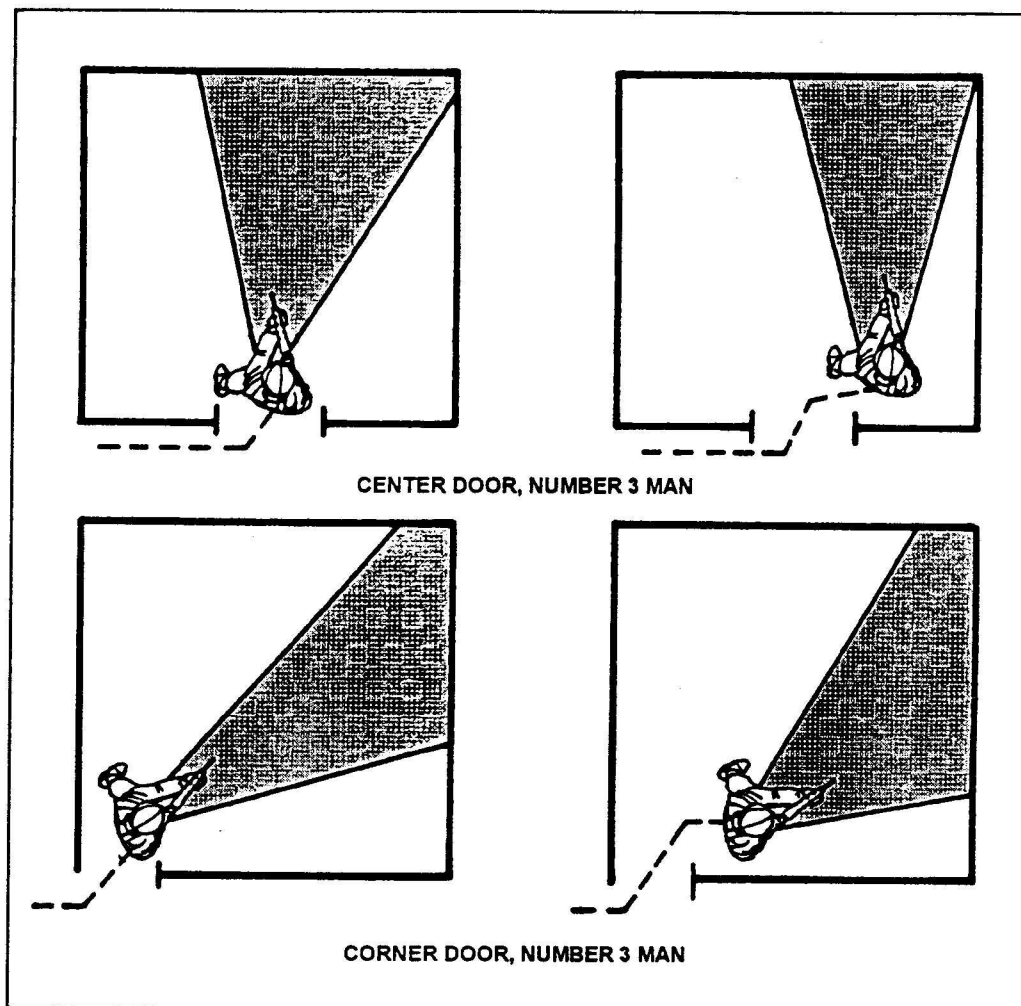


Figure K-7. Path of #3 man, center door and corner door.

(4) The squad leader can either use the number 4 man (normally the SAW gunner) as rear security at the breach site, or he can have him enter with the remainder of the team. If he enters, the number 4 man moves in the direction of the number 2 man and buttonhooks in the same way between the number 2 man and the door (Figure K-8).

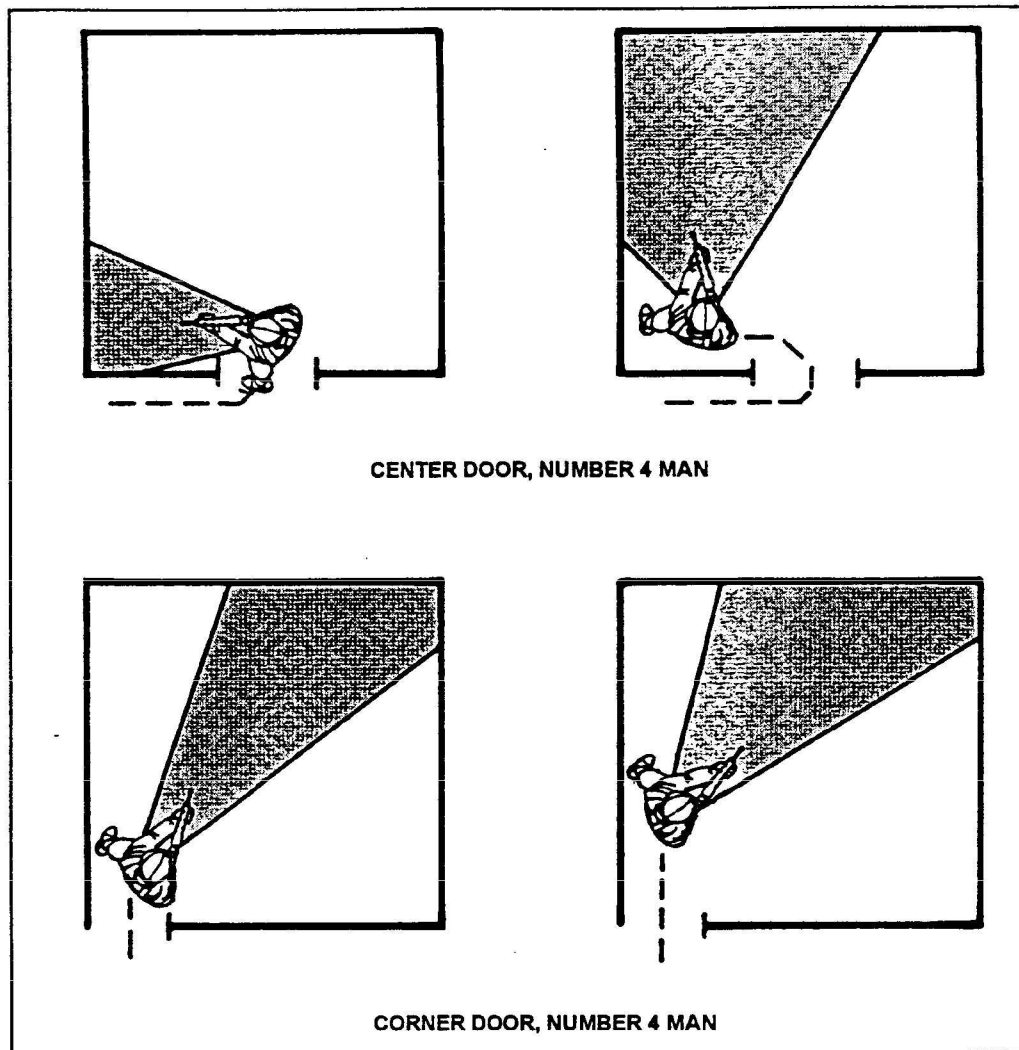


Figure K-8. Path of #4 man, center door and corner door.

c. To make close quarters combat techniques work, each member of the team must know his sector of fire and how his sector overlaps and links with the sectors of the other team members. Team members do not move to the point of domination and then engage their targets. They engage targets as they move to their designated point. However, engagements must not slow movement to their points of domination. Team members may shoot from as short a range as 1 to 2 inches. They engage the most immediate enemy threats first. Examples of immediate threats are enemy personnel who—

- Are armed and prepared to return fire immediately.
- Block movement to the position of domination.
- Are within arm's reach of a clearing team member.
- Are within 3 to 5 feet of the breach point.

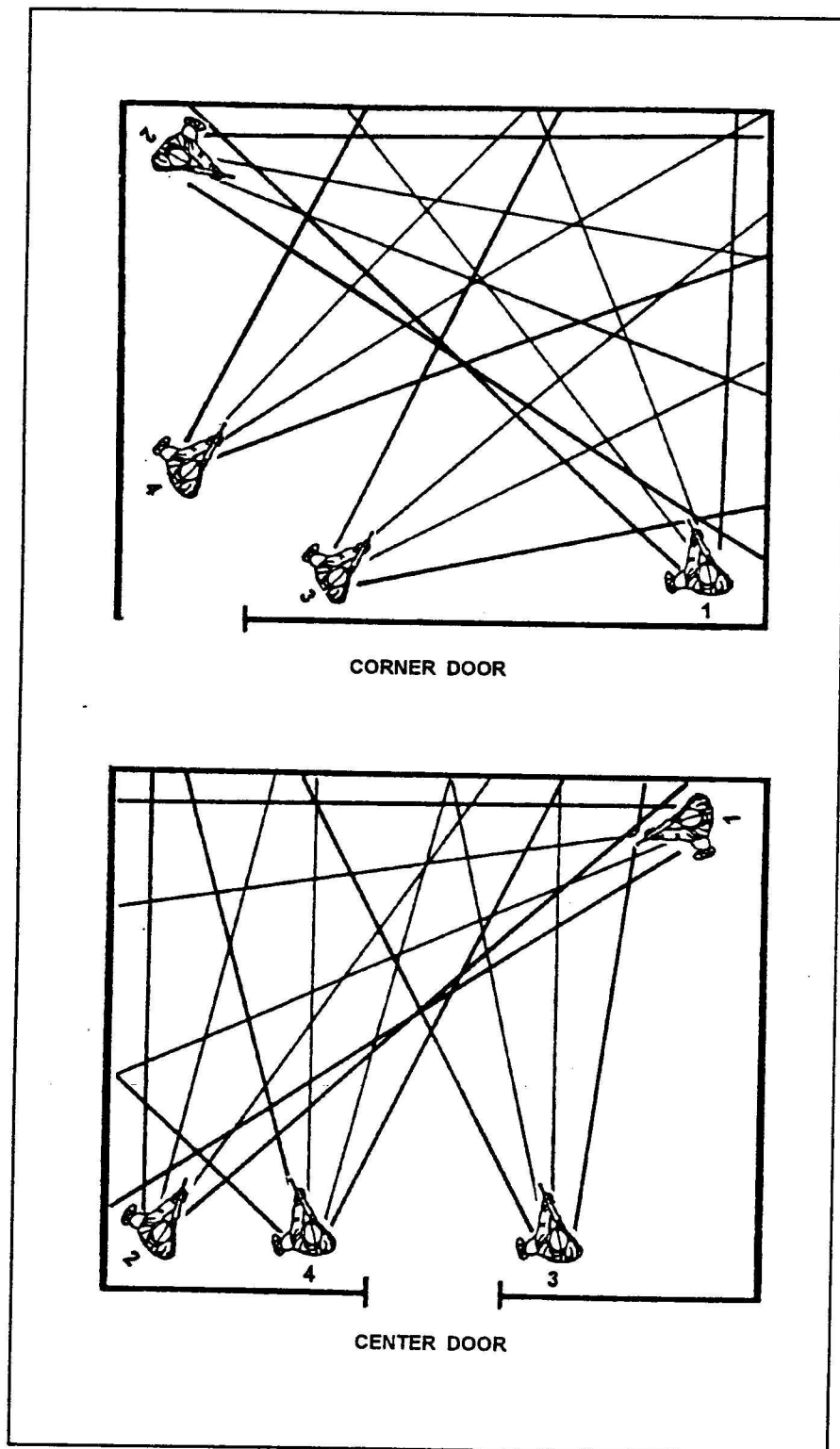


Figure K-9. Points of domination and sectors of fire  
(four-man team)

d. Each clearing team member has a designated sector of fire that is unique to him initially but expands to overlap sectors of the other team members.

(1) The number 1 and number 2 men are initially concerned with the area along the wall on either side of the door or entry point. This area is in their path of movement, and it is their primary sector of fire. Their alternate sector of fire is the wall that they are moving toward, sweeping back to the far corner.

(2) The number 3 and number 4 men start at the center of the wall opposite their point of entry and sweep to the left if moving toward the left, or to the right if moving toward the right. They stop short of their respective team member (either the number 1 man or the number 2 man).

e. While the team members move toward their points of domination, they engage all targets in their sector. Team members must exercise fire control and discriminate between hostile and non-combatant occupants of the room. Shooting is done without stopping, using reflexive shooting techniques. Because the soldiers are moving and shooting at the same time, they must move using careful hurry. They do not rush with total disregard for any obstacles. Figure K-9 shows all four team members at their points of domination and their overlapping sectors of fire.

f. When full four-man teams are not available for room clearing, three-man and two-man teams can be used. Figures K-10 and K-11 show the paths, points of domination, and sectors of fire for a three-man clearing team. Figures K-12 and K-13 show the same thing for a two-man team.

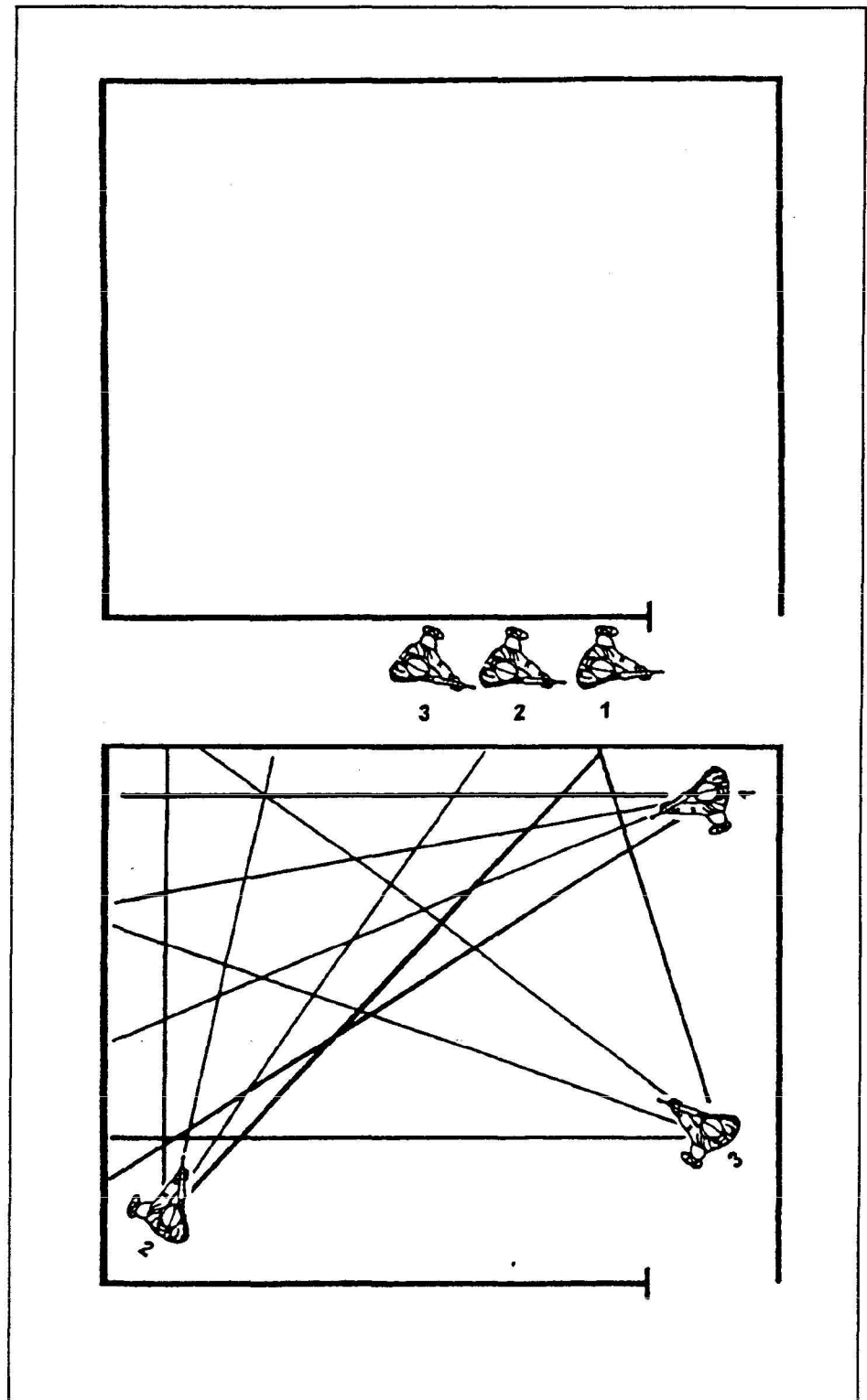


Figure K-10. Points of domination and sectors of fire (three-man team).

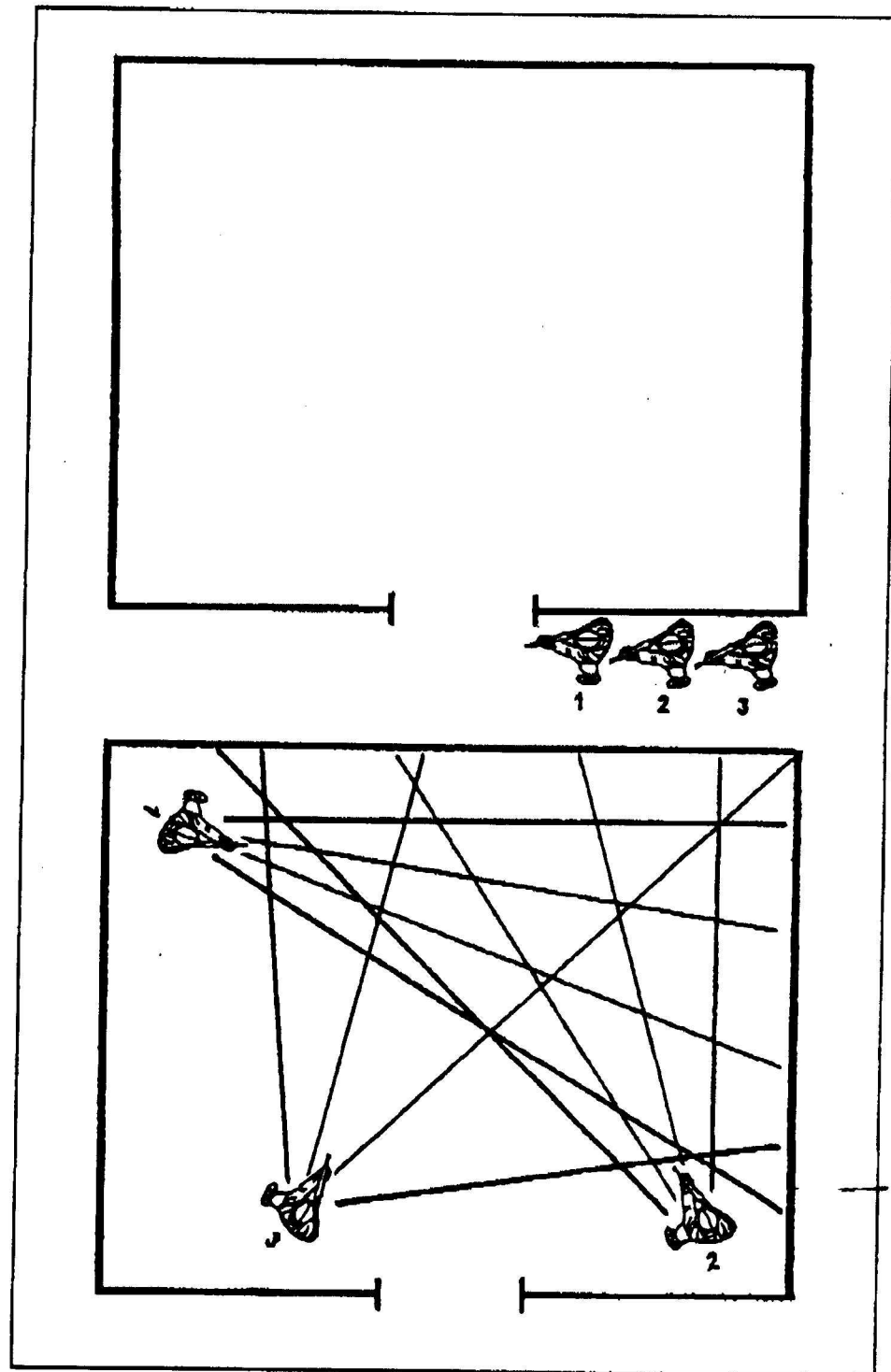
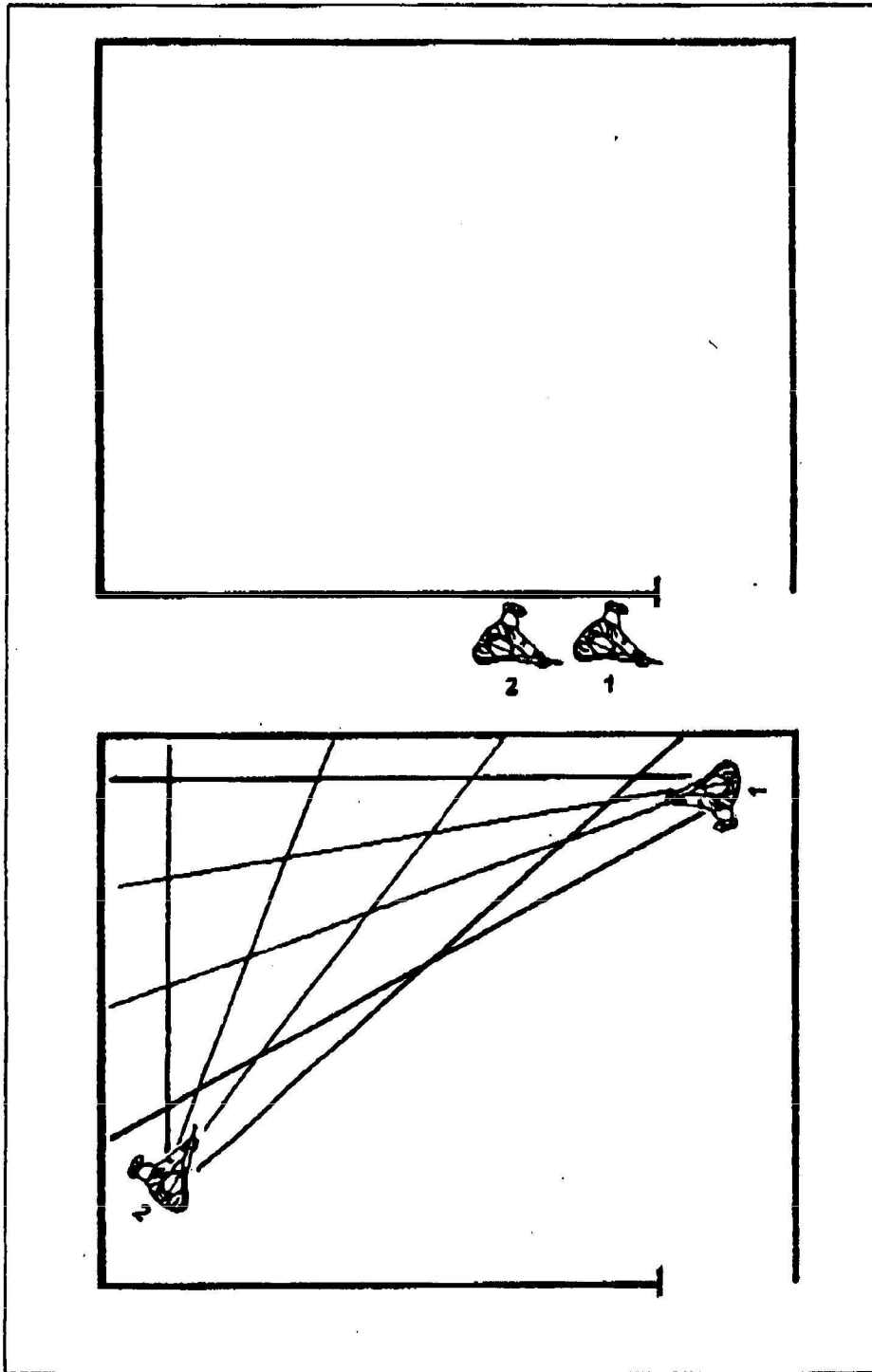


Figure K-11. Points of domination and sectors of fire (three-man team, center door).





**Figure K-12. Points of domination and sectors of fire  
(two-man team, corner door).**

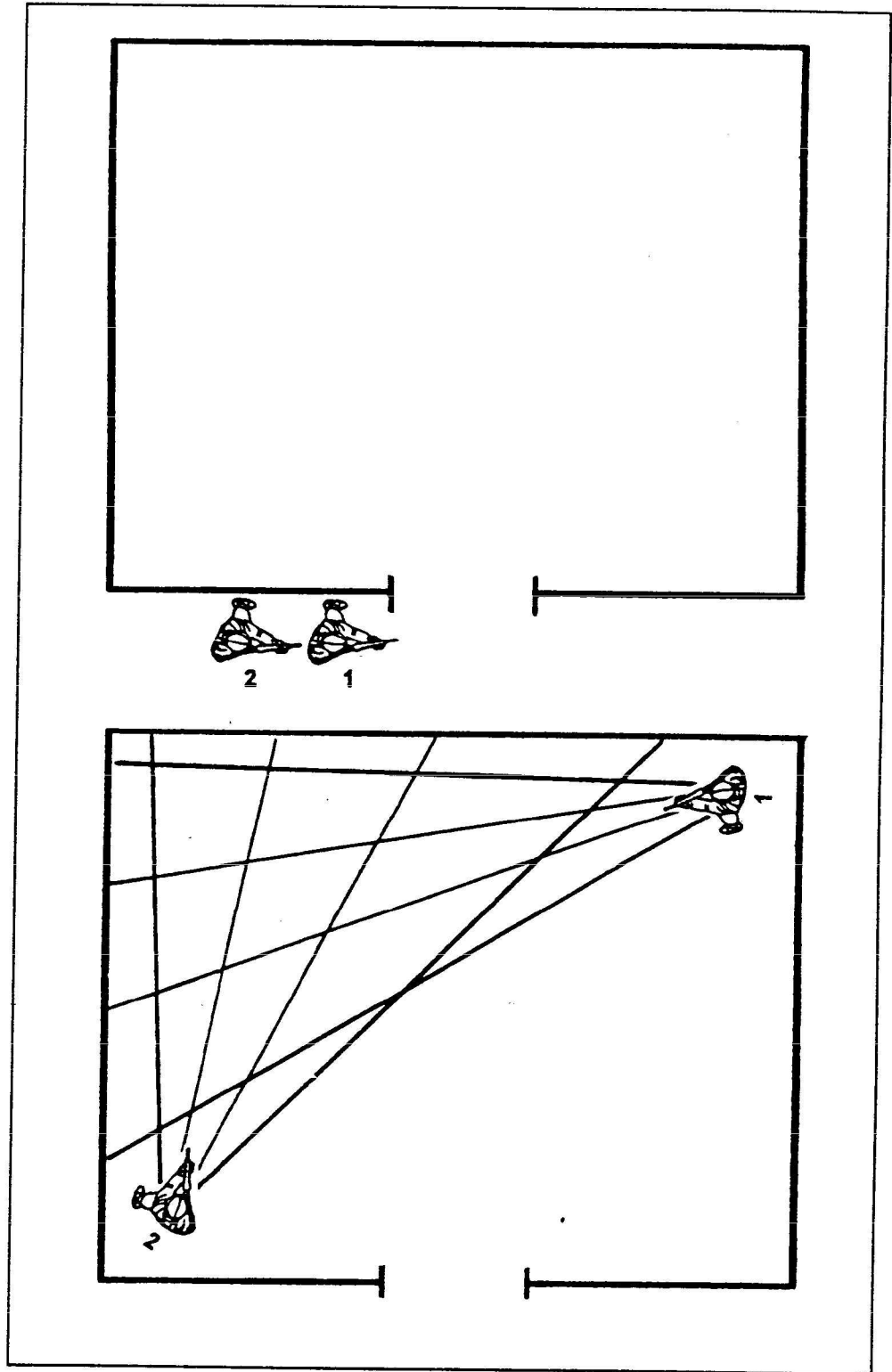


Figure K-13. Points of domination and sectors of fire (two-man team, center door).

## K-11. REFLEXIVE SHOOTING

During close quarters combat, there is little or no margin for error. Too slow a shot at an enemy, too fast a shot at a noncombatant or inaccurate shots can all be disastrous for the clearing team. Proper weapon carry technique, stance, aiming, shot placement, and trigger manipulation constitute the act of *reflexive shooting*. This method of shooting is the only way for the clearing team members to consistently succeed without excessive casualties.

a. **Weapon Ready Positions.** The two weapon ready positions are low ready and high ready.

(1) **Low ready position.** The butt of the weapon is placed firmly in the pocket of the shoulder with the barrel pointed down at a 45-degree angle. This is the safest carry position. It should be used by the clearing team while inside the room, except when actually entering and clearing.

(2) **High ready position.** The butt of the weapon is held under the armpit, with the barrel pointed slightly up, keeping the front sight assembly under the line of sight but within the gunner's peripheral vision. To engage a target, the gunner pushes the weapon out as if to bayonet the target. When the weapon leaves the armpit, he slides it up into the firing shoulder. This technique is best suited for the lineup outside the door.

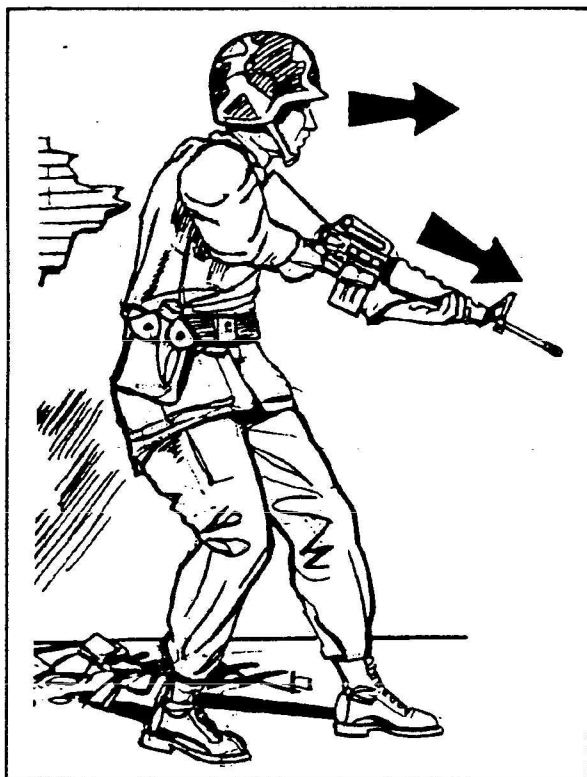


Figure K-14. The low ready position for the M16A2.



Figure K-15. The high ready position for the M16A2.

b. **Stance.** The feet are kept about shoulder-width apart. Toes are pointed straight to the front (direction of movement). The firing side foot is slightly

staggered to the rear of the non-firing side foot. Knees are slightly bent and the upper body is leaned slightly forward. Shoulders are square and pulled back, not rolled over or slouched. The head is up and both eyes are open. When engaging targets, the gunner holds the weapon with the butt in the pocket of his shoulder.

c. **Aim.** The four aiming techniques all have their place during combat in built-up areas, but the aimed quick-kill technique is the one most often used in close quarters combat.

(1) *Slow aimed fire.* This technique is the most accurate. It consists of taking up a steady, properly aligned sight picture and squeezing off rounds. It is normally used for engagements beyond 25 meters or when the need for accuracy overrides speed.

(2) *Rapid aimed fire.* This technique features an imperfect sight picture in which windage is critical but elevation is of lesser importance. When the front sight post is in line with the target, the gunner squeezes the trigger. This technique is used against targets out to 15 meters and is fairly accurate and very fast.

(3) *Aimed quick kill.* This technique consists of using a good spot weld and placing the front sight post flush on top of the rear peep sight. It is used for very quick shots out to 12 meters. Windage is important, but elevation is not critical with relation to the target. This technique is the fastest and most accurate. With practice, soldiers can become deadly shots at close range.

(4) *Instinctive fire.* This technique is the least desirable. The gunner focuses on the target and points the weapon in the target's general direction, using muscle memory to compensate for lack of aim. This technique should be used only in emergencies.

d. **Shot Placement** In close quarters combat, enemy soldiers must be incapacitated immediately. Shots that merely wound or that are mortal but do not incapacitate the target instantaneously are only slightly better than clean misses. Members of clearing teams should concentrate on achieving solid, well-placed head shots. This shot placement is difficult for some soldiers to learn, having been taught previously to aim at center of mass.

(1) The only shot placement that guarantees immediate and total incapacitation is one roughly centered in the face, below the middle of the forehead, and above the upper lip. Shots to the side of the head above the horizontal line passing through the ear opening to just below the crown of the skull and from the cheekbones rearward to the occipital lobe are also effective. With practice, accurate shot placement can be achieved. (See Figure K-16 for proper shot placement.)

(2) Shots to the spinal column below the jaw and above the sternum can neutralize a target immediately. However, the spinal column is a narrow target and misses by only a few centimeters may cause no immediate reaction or a delayed reaction in the target. Even though severely wounded, the enemy soldier may be able to return effective fire.

(3) Shots to the center of the chest that enter the lung/heart region are normally fatal but may take several seconds to incapacitate the target. During this time, the opponent may be able to return effective fire. This region of the

body may also be shielded by military equipment or protective vests that can often deflect or absorb rounds and prevent immediate incapacitation.

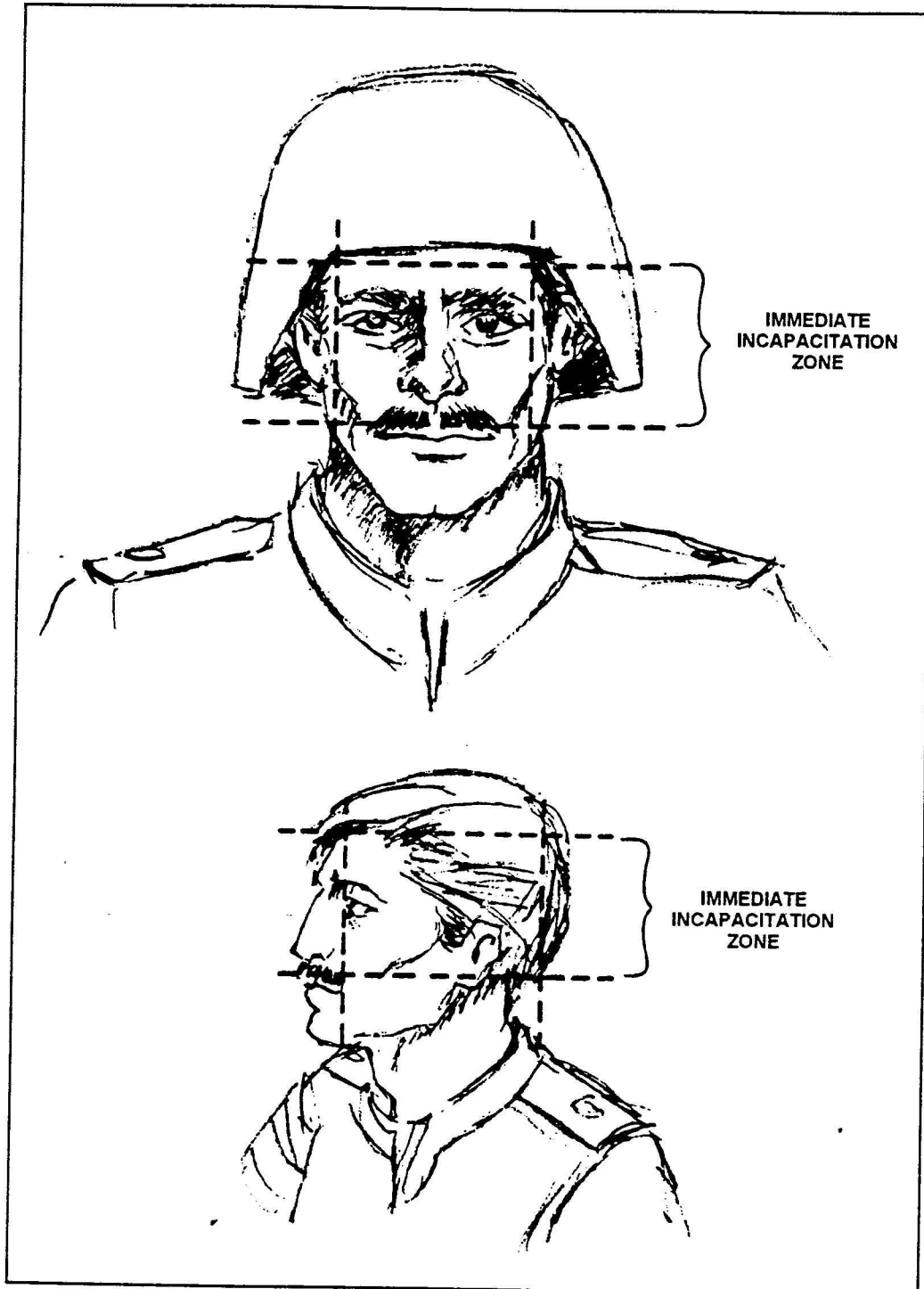


Figure K-16. Proper shot placement.

(4) Shots to the abdomen or lower extremities are rarely effective in rendering an opponent immediately incapable of returning fire, even if they are ultimately fatal.

e. **Trigger Manipulation.** Rapid, aimed, semiautomatic fire is the most effective method of engaging targets during close quarters combat. As each round is fired from the aimed quick-kill position, the weapon's recoil makes the front sight post move in a small natural arc. The gunner should not fight this recoil. He should let the weapon make the arc and immediately bring the front sight post back onto the target and take another shot. This two-shot combination is known as a *double tap*. Soldiers must practice the double tap until it becomes instinctive. Clearing team members continue to fire double taps until the target goes down. If there are multiple targets, team members double tap each one and then return to reengage any enemy left standing or who are still trying to resist.

(1) Controlled three-round bursts fired from the M16A2 rifle are better than fully automatic fire, but they are only slightly faster and not as accurate or effective as rapid, aimed semiautomatic fire.

(2) Fully automatic fire with the M16A2 rifle or carbine is rarely effective and may lead to unnecessary noncombatant casualties. Not only is fully automatic fire inaccurate and difficult to control, but it also rapidly empties ammunition magazines. A clearing team member who has expended his ammunition while inside a room with an armed, uninjured enemy soldier will become a casualty unless his fellow team members can quickly intervene.

## **K-12. TARGET DISCRIMINATION**

Target discrimination is the act of quickly distinguishing between combatant and noncombatant personnel and engaging only the combatants. US forces engage in close quarters combat in order to apply discriminating combat power and limit unnecessary casualties among noncombatants. Therefore, target discrimination is vital in close quarters combat. If there is no need for selective engagements, that is, only combatants attempting to resist are present, a much less discriminating use of firepower is possible. However, even if an area is known to be free of noncombatants, other soldiers moving through the area may be mistaken as enemy and engaged unless clearing team members are disciplined and well-trained in fire control and target discrimination. Even with well-trained, disciplined soldiers, close quarters combat can result in unintentional casualties among noncombatants. Commanders must recognize this and take steps to relieve the stress it causes soldiers.

## **K-13. SAFETY AND FORCE PROTECTION**

Close quarters combat is extremely dangerous, and even training for it can be hazardous. Only well-trained, disciplined soldiers will be able to execute these techniques successfully. In training and in combat, safety and force protection are vital command considerations.

a. Leaders at all levels must enforce safe handling of weapons and demolitions. The concern that individual soldiers not be injured in accidents is essential to mission accomplishment. Unintentional and unsafe weapons fire or detonation of explosives or munitions can jeopardize the mission of the clearing team and subsequently the entire unit.

b. Soldiers engaged in close quarters combat should wear all of their protective equipment.

(1) Soft body armor, such as the standard Army-issue Kevlar vest, is effective in preventing death or serious injury from high-velocity fragments that strike the torso area. Although the Kevlar protective vest is effective, flexible, and relatively comfortable, it is not designed to stop bullets. As a rule, soft body armor will stop some low-power handgun rounds but not rifle or carbine ammunition.

(2) Some versions of hard body armor will stop almost any round fired at it. They tend to be heavy and stiff but have been proven effective during close quarters combat. If a commander knows his unit will be conducting lengthy close quarters combat, he should request a special issue of threat level III protective equipment. This equipment is excellent, but soldiers must train and rehearse wearing it before they enter combat. All close quarters combat is tiring, and soldiers wearing threat level III vests will tire or overheat more quickly.

(3) The standard Army Kevlar helmet and ballistic protective eyeglasses have also been proven to significantly reduce casualties during close quarters combat. Historically, eye injuries caused by small metal fragments or pieces of stone or concrete have been a large percentage of casualties during combat in built-up areas.

(4) Hard plastic knee and elbow protectors are available upon special request. They are useful, especially during prolonged search and clear operations. They prevent injury from rubble and broken glass when kneeling or prone.

c. Detailed knowledge of weapons and munitions effects is important to the safety of members of the clearing team, as well as to mission accomplishment. Most interior walls of buildings do not stop rifle fire. Fragments from grenades often penetrate interior walls. Standard home furnishings or office furniture offer little protection from high-velocity rounds. Excessive amounts of demolitions used to breach a wall may knock it down instead, perhaps even bring the roof of the building down also.

#### **K-14. CLOSE QUARTERS COMBAT DURING DARKNESS**

Mission accomplishment is the most important criterion of night operations, not the use of special equipment. All the specialized night vision equipment in the US armory cannot replace a trained, skilled soldier intent on mission accomplishment. Even in today's era of high technology, no failsafe system exists that allows an individual soldier to effectively identify and engage targets in total darkness. The commander must carefully consider the situation

and the equipment available to him before he decides whether to use visible, invisible, or no artificial light during close quarters combat.

a. **Equipment.** Some specialized night vision equipment is available to the soldier now; other equipment will be available in the future.

(1) *AN/PAQ-4 aiming light.* This device projects a pulsing dot of IR light along the weapon's line of sight. The dot is invisible to the naked eye, but it can be seen by personnel wearing night vision goggles. Gunners with weapons equipped with the AN/PAQ-4 aiming light simply place the projected spot on the target and fire.

(2) *AN/PVS-5 and AN/PVS-7 night vision goggles.* These goggles are lightweight, battery-powered passive devices worn on the head. Each has an IR-emitting light source for close-up illumination.

(3) *Tactical lights.* These devices are small, lightweight, battery-powered white lights that can be attached to weapons. The light is activated by either a pressure switch or an on/off switch. An IR filter can be attached to most tactical lights to provide covert illumination. The most common example of a tactical light is sold under the name Maglite. This light can be attached to weapons using hose clamps or heavy tape. They must be checked periodically, because they can loosen and shift.

(4) *Red dot sights.* These devices are lightweight, battery-powered optical sights attached to the top of the weapon. A red dot in the sight aligns the weapon and the target. These sights are for use in low light levels, not total darkness. They do not assist in identifying targets.

(5) *Active laser devices.* These devices are lightweight, battery-powered, visible light-emitting sights. The device projects a red dot onto the target that corresponds to the point of bullet impact. These devices are not effective in sunlight.

(6) *Various thermal weapons sights.* In the near future, thermal weapons sights will be available to detect targets in total darkness.

b. **Use of White Light.** Although not covert, white light has several advantages:

- The equipment is readily available and reliable.
- No additional training is required.
- It offers the fastest means of identifying targets and searching a room.
- It allows color vision.

The main disadvantage is that an active light source can compromise a clearing team's position inside a room or building. Another disadvantage is that a light may be activated too soon and alert the enemy to the clearing team's presence.



## EMPLOYMENT OF ARMED HELICOPTERS IN BUILT-UP AREAS

*Wherever infantry forces are sent in the world, whether for combat operations or operations other than war, they will operate part of the time in built-up areas. Operating alongside and supporting them will be armed helicopters flown by technically skilled and tactically proficient US aviators. The commander or small-unit leader on the ground are responsible for ensuring the actions of these powerful aircraft are smoothly integrated into the combined arms team. Joint operations will mean that the aircraft supporting ground forces may be Army or USMC. During combined and coalition operations, especially during OOTW, it is more and more likely that armed helicopters from other nations may support US forces. In those cases, detailed information on their capabilities and employment techniques must be obtained through liaison channels.*

### **L-1. MISSIONS OF ARMED HELICOPTERS SUPPORTING MOUT**

Infantry units may be supported by a variety of armed helicopters ranging from fully modernized AH-64s or somewhat less capable AH-1s, to lightly armed but agile OH-58Ds and AH-6s. Regardless of the specific type of armed helicopter available, the same missions and tasks can be accomplished due to the inherent flexibility of Army aviation units.

a. The most common missions assigned to armed helicopters during MOUT are the following:

- (1) Escort of troop-carrying aircraft during air assaults.
- (2) Overwatch and supporting attacks integrated with the ground commander's maneuver.
- (3) Interdiction and destruction of enemy armored vehicles moving against friendly forces.
- (4) Precision engagement of hardened point targets.

b. In addition to the missions listed above, armed helicopters may be called on to perform some additional, nontraditional roles during MOUT. This is particularly true during OOTW in urban areas. Additional missions may include the following:

- (1) Assisting, for limited periods, in the control and coordination of fires with the maneuver of ground forces.
- (2) Providing limited relay of radio messages from isolated ground units.
- (3) Marking or identifying specific buildings and areas by smoke, fires, or targeting lasers.
- (4) Videotaping routes or objectives for later analysis by ground commanders.
- (5) Providing navigational and directional assistance to ground units.

(6) Providing limited area illumination by infrared or white light using either on-board sources or illumination rockets.

(7) Providing countersniper and counter-mortar/rocket armed reconnaissance patrols around friendly unit locations.

## **L-2. PLANNING CONSIDERATIONS FOR ARMED HELICOPTER EMPLOYMENT**

Although armed helicopters provide a flexibility and responsiveness almost unequaled by any other means of fire support, detailed planning is required to effectively integrate them with ground operations to accomplish the overall mission. The following must be considered when planning employment of armed helicopters.

a. **Increased Exposure to Direct Fire.** The ground-fire threat to armed helicopters increases during MOUT. Urban areas force the concentration of units and provide excellent cover and concealment for enemy gunners. In order to limit exposure to heavy anti-aircraft weapons, helicopters may have to stay low and move quickly. This increases their vulnerability to light small-arms fire.

b. **Obstacles to Flight.** Obstacles within urban areas are more numerous and dangerous than in any other environment. These obstacles include such things as—

- (1) Power lines and power cable pylons.
- (2) Hard-to-see telephone lines, trolley cables, and traffic light cables.
- (3) Light poles, rooftop antennas, and telecommunication towers.
- (4) Towering buildings that may prevent rapid vertical maneuvering of heavily loaded aircraft.

c. **Navigational Difficulties.** Even though pilots can often see better than observers on the ground, because most maps do not show the vertical development of urban terrain, pilots can easily become temporarily misoriented. Navigational aids, such as GPS, have lessened but not eliminated this problem. Rapid displacement from position to position can sometimes create confusion between aerial and ground observers as to cardinal directions or locations. Mission planning should include the use of upgraded photoimagery whenever possible. Newly developed areas or buildings may not show on recent maps. Some advanced computer simulation aids are now available to generate three-dimensional aerial views, which can be very useful especially during OOTW. Differing datums between the ground unit's maps and the aerial unit's GPS can cause significant confusion unless compensated for.

d. **Weapons Limitations.** Many characteristics of operations in urban areas limit weapons employment.

(1) Weapons use may be limited by the short arming/slant ranges within the urban area. Precision weapons, such as TOW and Hellfire missiles, require about 500 meters minimum range to reliably arm and stabilize on the intended target. Often, fire from longer ranges actually improves accuracy.

(2) Extensive use of precision weapons by several units in close proximity may cause coordination problems with target identification and designation.

(3) Laser designation by both ground and aerial systems may be degraded by the large expanses of polished, flat reflective surfaces common in many urban areas.

(4) With the obvious exception of precision strikes by TOW or Hellfire, aerial fires can rarely destroy a target or kill large numbers of enemy forces within buildings. These fires provide excellent suppression, however, and can drive enemy forces away from firing positions or fix the enemy in place until ground maneuver forces can destroy him. Enemy positions that have been struck by fire can normally be reoccupied quickly by the enemy.

(5) Target identification and marking may be difficult because of heavy smoke and dust rising from urban fires and explosions. Some smoke from fires in industrial areas may be highly toxic or irritating. Pilots may have to don chemical protective equipment that hinders target detection and engagement. Friendly unit locations and personnel can be marked with colored panels, glint tape, strobe lights, and colored smoke. Targets can be marked with infrared laser pointers, such as the GCP-1 Ground Commander Pointer/Illuminator, colored M203 smoke rounds, M203 or mortar flares burning on the ground, or tracer fires. In some situations, improvised spotlights can also be used.

(6) If the combat situation allows, pilots should make a nonfiring (dry) run first before returning for a firing pass. Although fire from stationary positions is more accurate, running fire is normally safer for the aircraft due to enemy ground fire. If possible, ground commanders should avoid directing pilots along a gun-target line that passes over friendly troops. Gun-target runs that are perpendicular to the friendly unit's front are normally best.

e. **Aircraft Power Limitations.** The need to deliver hovering fires from temporary battle positions may require the aircraft to carry less than a full load of munitions or fuel. This is especially true with older model aircraft in hot, wet climates. Reduced loads mean more frequent trips to forward area refuel and rearm points and less time on station.

f. **Command and Support Relationships.** From the ground unit perspective, armed helicopters are most effective when they operate under the OPCON of the ground unit commander closest to the enemy. Normally, the infantry battalion is the lowest level granted formal OPCON of armed helicopters. However, in an urban area the battalion commander is rarely able to identify the precise location of enemy forces or to coordinate aerial fires with friendly squad and platoon maneuver. He often must pass the responsibility for close coordinate on of armed helicopter fires to the small-unit commander or leader on the scene. This commander can direct the efforts of only a few aircraft at a time, normally a scout weapons team consisting of an unarmed observation aircraft and an attack helicopter or two armed aircraft. It may be more effective for the aviation unit to retain control of its individual aircraft and operate by continuously rotating armed helicopter elements into the battle area where they then coordinate their attacks with the ground commander's maneuver. Generally, the smaller and more decentralized the combat actions, the better it is to have armed aircraft coordinate directly with the small-unit leader on the ground. The larger, more centralized the combat action, the better it is to retain control of armed aircraft by the aviation

headquarters. Whichever command and support relationship is chosen, both the ground and the aviation headquarters must understand what is expected of the other. Close liaison and unambiguous verbal communication are important.

### **L-3. ARMED HELICOPTER OPERATIONS IN LIMITED VISIBILITY**

Although US helicopters possess the most sophisticated night vision equipment in the world, armed helicopter operations in limited visibility are difficult and require extra care.

a. The extensive use of GPS and handheld laser pointers or designators eases the problems associated with night navigation, orientation, and target identification.

b. Operations that involve twilight, either dawn or dusk, present special problems for aircrews using image-intensification NVDs. The rapid change in the amount of illumination makes it difficult for pilots to observe the ground and see other aircraft. In the confined airspace low over an urban area, with friendly and enemy forces close by and dangerous obstacles, such as antennas, hard to see, armed helicopter support is difficult and dangerous. Infantry units should seek the advice of experienced aviators when planning night operations, especially those that may extend through a period of twilight.

c. Artificially lit urban areas create a hazard for pilots using image-intensification NVDs. One method of bleaching out bright city lights is to use the infrared light found on most US aircraft. This makes it easier to see and avoid obstacles, especially rooftop antennas, which stand out well in infrared light.

d. Forward-looking infrared devices found on OH-58D, AH-64, and some SOF aircraft are not affected by artificial light and are generally effective targeting systems in urban areas. Depending on the equipment used by the ground commander, these aircraft may or may not be able to detect laser pointer devices. Close liaison with the aviation unit prevents misunderstandings and maximizes the combat effectiveness of armed helicopters supporting infantry maneuver in urban combat.

## FIELD-EXPEDIENT BREACHING OF COMMON URBAN BARRIERS

*An integral part of combat in built-up areas is the need to gain access to compounds, buildings, and rooms. Mechanical breaching of doors or windows using weapons fire, sledgehammers, bolt cutters, saws, or crowbars is almost always an option for infantrymen attempting to gain rapid access, but it is sometimes too slow or exposes them to too much risk of enemy fire. Explosive breaching is often the fastest and most combat-effective method. With a little time to prepare, units can use slightly modified standard Army demolitions to breach all common urban barriers.*

### **M-1. FORCE PROTECTION**

As in all operations involving demolitions, soldiers must take care when fabricating, carrying, and using field-expedient explosive devices. Leaders must ensure that all the standard procedures and precautions outlined in doctrinal and training material for Army demolitions activities are followed. This is dictated by more than just the commander's concern for the safety and welfare of his individual soldiers. Accidental or premature detonation of demolitions during combat not only can injure or kill friendly soldiers but also can jeopardize the unit's mission. During combat, soldiers often need to position themselves close to breach points in order to enter quickly and overcome enemy resistance before the effects of the explosion subside. However, a soldier who is too close to an explosion and injured by flying debris is considered a casualty the same as one who is shot by the enemy. The unit must accomplish its mission without sustaining friendly casualties from its own demolitions. All demolitions have the potential to cause injury to nearby personnel, mainly from flying debris but also from blast and noise overpressure.

### **M-2. BREACHING REINFORCED AND NONREINFORCED EXTERIOR WALLS**

The Army issues both bulk explosives (TNT or C4) and prepackaged satchel charges that are powerful enough to breach all but the most heavily reinforced exterior walls. In some situations, satchel charges may be unavailable or they may prove to be too powerful for the breach required. In high-intensity urban conflict, the situation may call for large amounts of bulk explosive, but in many situations the commander wants to create a smaller-size hole than the M37 or M183 satchel charges normally produce. Smaller, yet effective, satchel charges can be improvised. Experimentation can determine the correct size of

these improvised satchels, depending on the types of walls found in the battle area.

a. General-purpose satchel charges can be assembled using empty machine gun ammunition bandoleers filled with various amounts of C4 explosive.

(1) Connect a short length of detonation cord firmly to the explosive and leave it dangling. Tape the explosive securely into the bandoleer.

(2) Hang the charge on a wall by the bandoleer strap or prop it against the wall using a stick or other object. Satchel charges detonated while held firmly against the target wall at about shoulder height produce the best effects.

(3) Prime the charge, attaching either an electric or nonelectric firing system to the short length of detonation cord left dangling.

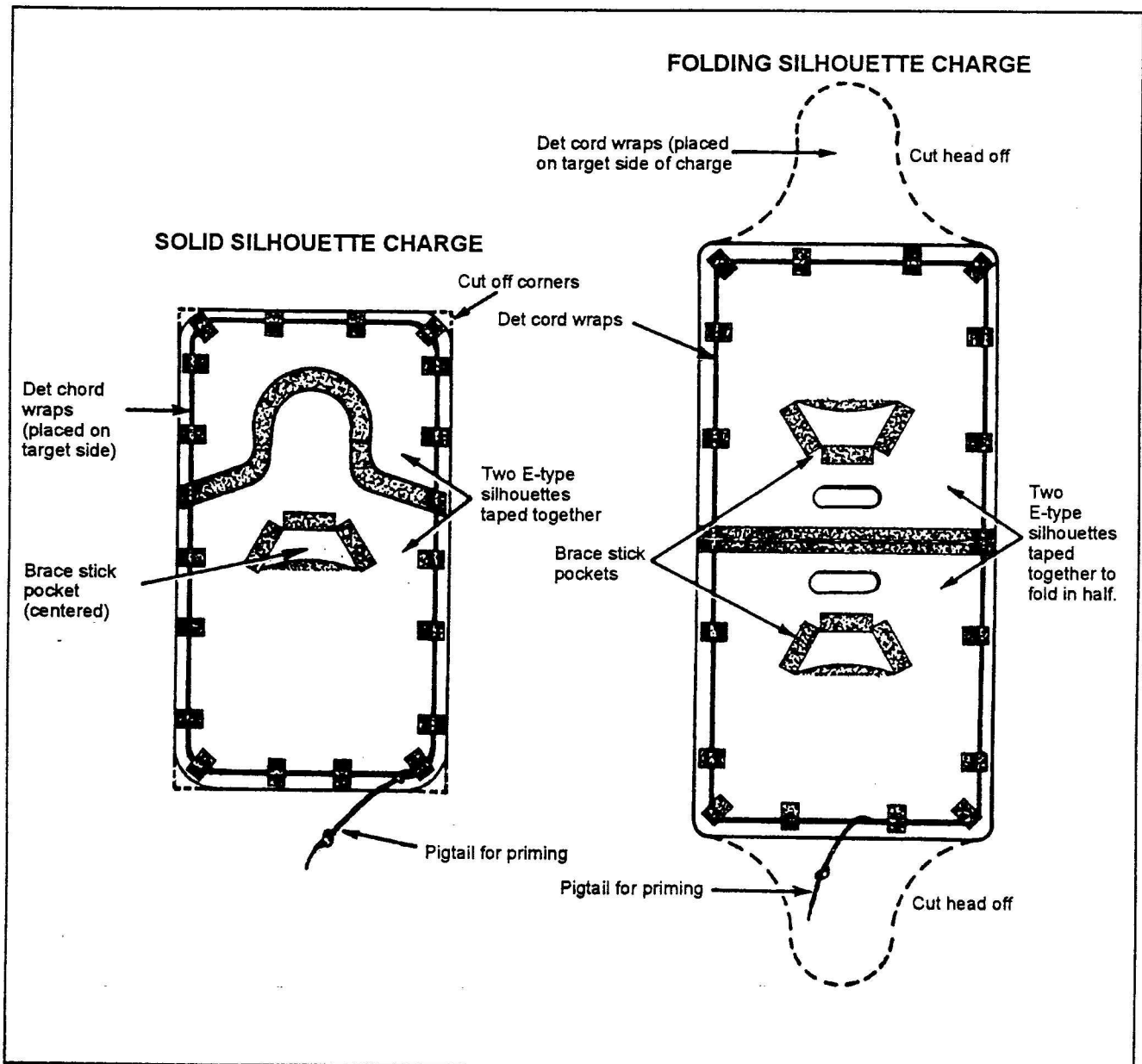
When used against nonreinforced concrete walls, a satchel charge containing 2 pounds of C4 normally produces a mousehole; 5 pounds create a hole large enough for a man to move through; 7 pounds create a large hole through which two men can move simultaneously; and 10 pounds can blow a hole large enough to drive a vehicle through. The 10-pound charge may also destroy the entire building if it is not of sturdy construction.

b. A useful breaching charge improvised by light engineer sappers during combat operations in Somalia consisted of a 3-foot length of engineer picket (U-shaped engineer stake) packed with 4 to 8 pounds of C4. The explosive was primed with detonation cord and taped securely to the picket. When needed, the picket was placed upright with its flat side against the wall, held to the wall by another stake, and then detonated. This charge could be rapidly fabricated, was sturdy, and could be easily and quickly emplaced. According to reports from the field, this device would blow a hole about 4 feet wide and 8 feet high in a nonreinforced concrete wall (common in the third world). The charge would throw fragments from the picket straight back for long distances (from 50 to 100 meters) but was fairly safe to either side. In combat, infantrymen could stand about 20 meters from the picket, crouched tightly against the wall with their backs turned to the explosive, without undue risk. This allowed them to follow up on the explosion with a rapid assault into the compound or building before the occupants could recover.

### **M-3. BREACHING INTERIOR WALLS AND PARTITIONS**

Interior walls generally require much less explosive to create a satisfactory breach than do exterior, load-bearing walls. An easily fabricated silhouette charge can further reduce the amount of explosive needed to breach plywood, sheet rock, or light plaster walls. It can also be used to breach wooden or metal doors. This charge produces a hole large enough for a man to run through. It can be emplaced quickly and throws only a small amount of dangerous material back into the first room.

a. Tape two E-type silhouette targets or similar stiff cardboard together. To make the charge easier to carry, it can be built to fold in the middle (Figure M-1). Rounding the corners makes the charge easier to handle.



**Figure M-1. Construction of solid and folding silhouette charges.**

b. Place detonation cord or flexible linear-shaped charge (FLSC) around the edges of the silhouettes, leaving a 6-inch tail for priming. Secure the cord to the silhouette using sturdy tape. (See Table M-1 for the appropriate number of wraps of detonation cord or FLSC to breach various barriers.) Tape several small dowels or other materials at various places around the silhouette if using FLSC. This provides the necessary stand-off distance to ensure the maximum shaped charge effect. (See Table M-2 for the required stand-off distance for various sizes of FLSC.)

Type of Obstacle	Detonation Cord Needed	FLSC Needed
Hollow-core door	1 wrap	75 grain/foot
Particle-filled door (1 inch)	2 wraps	75 grain/foot
Solid wood door (2 inches)	3 wraps	75 grain/foot
High-quality solid door	4 wraps	225 grain/foot
1/4-inch plywood	1 wrap	75 grain foot
1/2-inch plywood	2 wraps	75 grain/foot
3/4-inch plywood	3 wraps	75 grain/foot
Light metal door	NA	225 grain/foot
Medium steel door	NA	300 grain/foot
Heavy steel door	NA	300 grain/foot

**Table M-1. Silhouette charge explosive loads.**

Standoff Required for FLSC	
75 grain	0 - 1/16 inch
225 grain	1/8 inch
300 grain	1/8 inch - 3/16 inch

**Table M-2. Standoff required for flexible linear-shaped charges**

c. Using heavy-duty tape, place three or four strips of double-sided contact tape on the front of the silhouette from top to bottom. Construct a sturdy pocket for a brace stick in the appropriate position on the back of the silhouette.

d. Pull the covering off the double-sided tape and place the charge against the wall at knee height, bracing it if necessary. Prime, take cover, and detonate.

#### **M-4. DOOR-BREACHING CHARGES**

Several different field-expedient charges can be used to breach interior or exterior doors. Among these are the general-purpose charge, the rubber band charge, the flexible linear charge, and the doorknob charge. All can be made ahead of time and are simple, compact, lightweight, and easy to emplace.



a. The *general-purpose charge* is the most useful preassembled charge for breaching a door or other barrier. As its name implies, it is useful not only for door breaching, but it can also cut mild steel chain and destroy captured enemy equipment.

(1) Start building the general-purpose charge with a length of detonation cord about 2 feet long. Using another length of detonation cord, tie two uli knots (Figure M-2) around the 2-foot long cord. The uli knots must have a minimum of six wraps and be loose enough for them to slide along the main line. Trim excess cord from the uli knots and secure them with tape, if necessary.

(2) Cut a block of C4 explosive to a 2-inch square. Tape one uli knot to each side of the C4 block, leaving the length of detonation cord free to slide through the knots (Figure M-3).

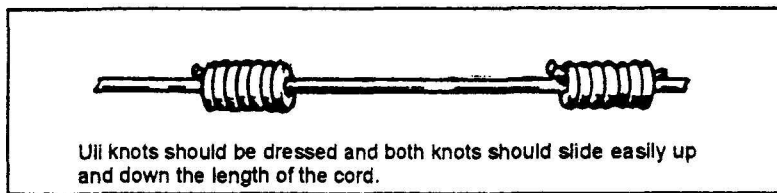


Figure M-2. Sliding uli knots.

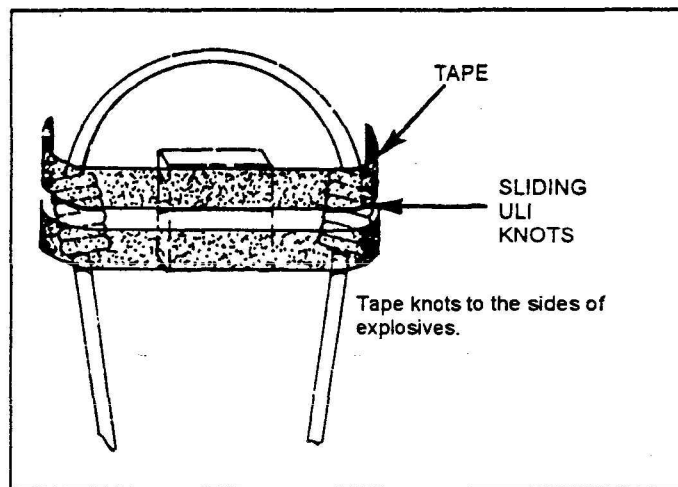


Figure M-3. Completed general-purpose charge.

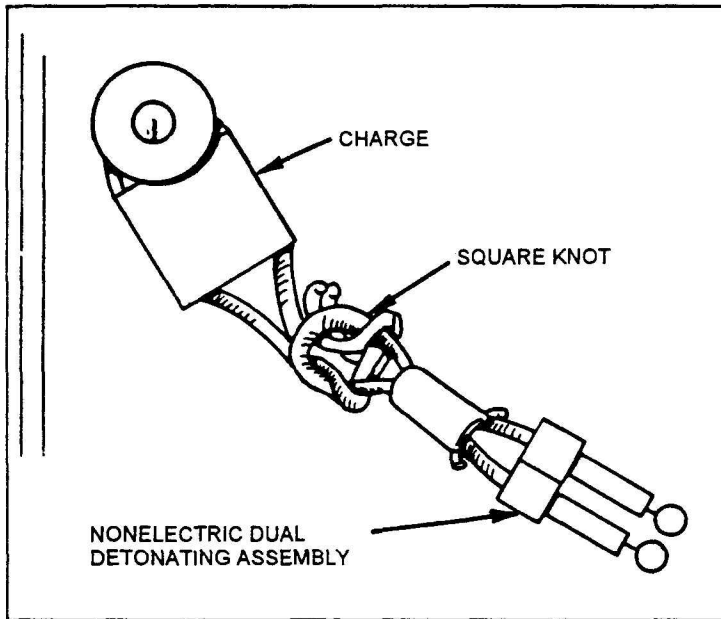


Figure M-4. Charge placement against doorknob.

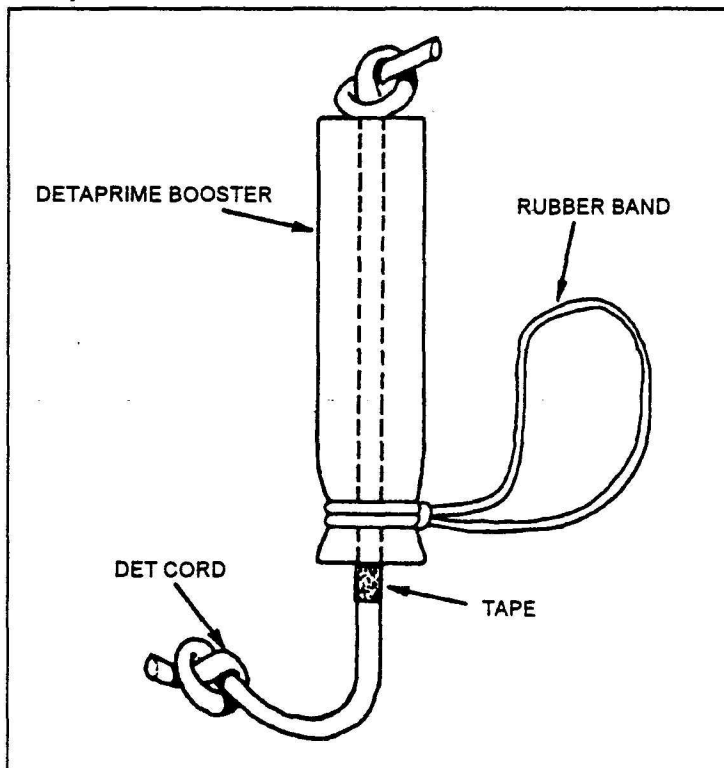


Figure M-5. Rubber band charge with Detaprime booster.

(3) To breach a standard door, place the top loop of the charge over the doorknob. Slide the uli knots taped to the C4 so that the charge is tight against the knob. Prime the loose ends of the detonation cord with either an electric or nonelectric firing system and detonate (Figure M-4). To cut mild steel chain, place the loop completely around the chain link to form a girth hitch. Tighten the loop against the link by sliding the uli knots.

b. The *rubber band charge* is another easily fabricated, lightweight device that can be used to remove the locking mechanism or doorknob from wooden or light metal doors, or to break a standard-size padlock at the shackle.

(1) Cut a 10-inch piece of detonation cord and tie an overhand knot in one end. Using another piece of detonation cord, tie a uli knot with at least eight wraps around the first length of cord. As an alternative to the uli knot, pass the detonation cord through the center of a 20-gram Detaprime booster. Slide the uli knot or the Detaprime booster tightly up against the overhand knot. Secure it in place with either tape or string. Loop a strong rubber band around the base of the uli knot tied around the detonation cord, or around the base of the booster. Tie an overhand knot in the other end of the cord to form a pigtail for priming the charge (Figure M-5).

(2) Attach the charge to the doorknob (or locking mechanism) by pulling the loose end of the rubber band around the knob. The charge should be placed between the knob and the door frame. This places the explosive over the bolt that secures the door to the frame.

c. One of the simplest field-expedient charges for breaching wooden doors is the *flexible linear charge*. It can be made in almost any length and then cut to the right size quickly just before it is used. It can be rolled up and easily carried until needed. It is effective against hollow-core, particle-

filled, and solid wood doors. When detonated, the flexible linear charge cuts through the door near the hinges (Figure M-6).

(1) Lay out a length of double-sided contact tape with the top-side adhesive exposed. Place the necessary number of strands of detonation cord down the center of the double-sided tape, pressing them firmly in place. For hollow-core doors, use a single strand. For particle-filled doors, use two strands, and for solid wood doors use three. If the type doors encountered is unknown, use three strands. One of the strands must be cut about a foot longer than the others and should extend past the end of the double-sided tape. This forms a pigtail where the firing system is attached once the charge is in place.

(2) Cover the strands of detonation cord and all the exposed portions of the double-sided tape with either sturdy single-sided tape or another length of double-sided tape. Roll the charge, starting at the pigtail, with the double-sided tape surface that is to be placed against the door on the inside.

(3) At the breach site, place the charge straight up and down tightly against the door. If the charge is too long, angle it to best fit the door. If it is too short, place it so that it covers at least half of the door's height. Prime and fire the charge from the bottom.

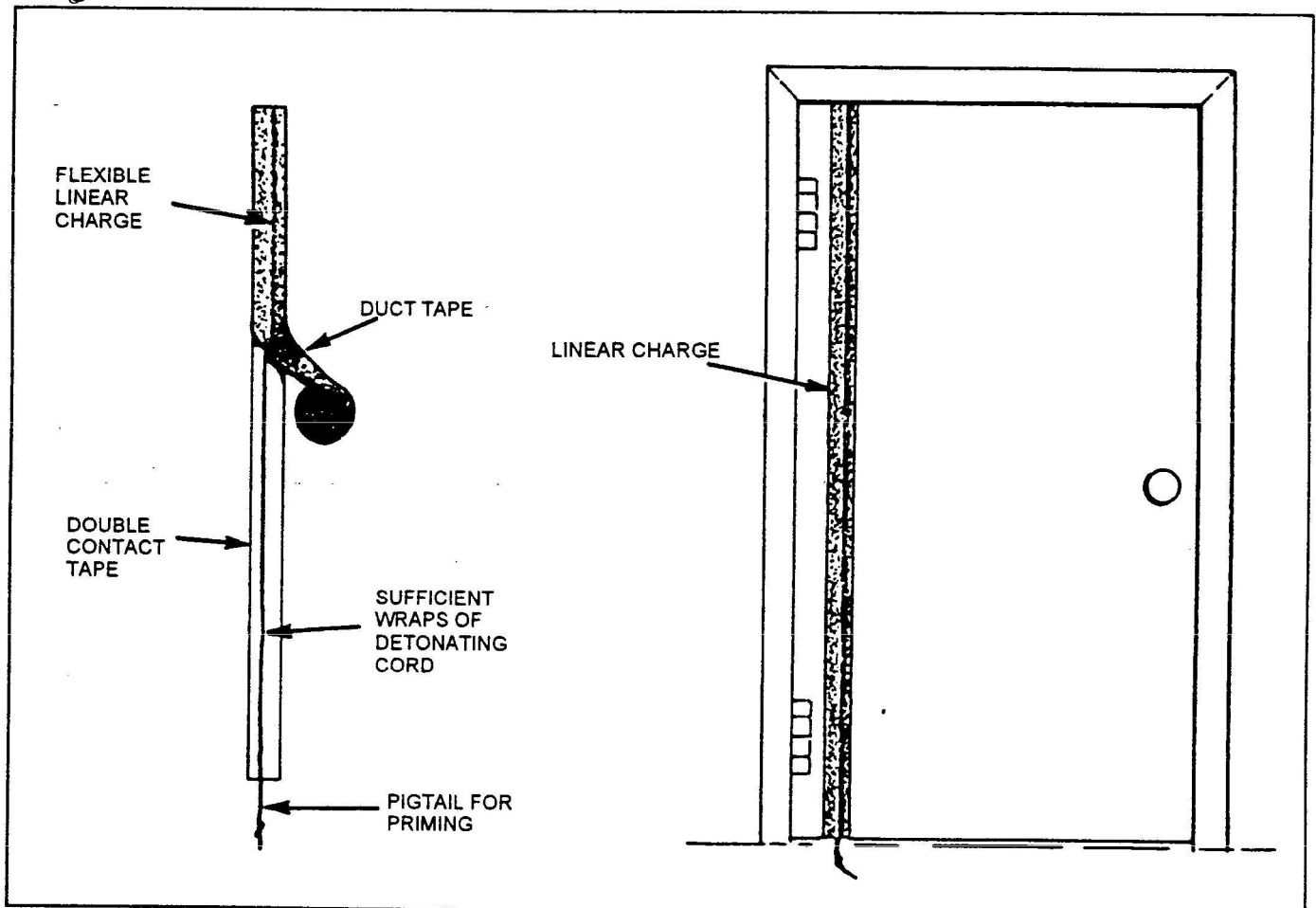


Figure M-6. Placement of the flexible linear charge.

d. A *doorknob charge* is easy to make and is highly effective against wooden or light metal doors. Charges for use against wooden doors can be made with detonation cord. If the charge is to breach a light metal door, either detonation cord (3 lengths) or 225 grain/foot FLSC should be used.

(1) Cut the appropriate amount of detonation cord for the charge. Use a 30-inch length for a hollow-core door. For a particle-filled door, use one 30-inch length and one 18-inch length. For a solid-core wooden door or a light metal door, use one 30-inch length and two 18-inch lengths.

(2) Cut the charge holder from a piece of stiff cardboard.

(3) Tape the detonation cord in the shape of a large "C" along the edge of the charge holder. Leave a 12-inch pigtail for priming (Figure M-7). Place double-sided tape on the back of the charge holder.

(4) If using FLSC, cut a length 21 inches long. Cut a 20-gram Detaprime booster in half. Tape the FLSC to the charge holder, leaving a 3-inch tail for priming. Bend the tail upward. Slide a 12-inch length of detonation cord through the Detaprime booster and tie an overhand knot on each end. Tape the booster and detonation cord combination to the tail end of the FLSC.

(5) Hang the charge on the door knob or locking mechanism. Secure it in place with the double-sided tape. The detonation cord must be held firmly against the door's surface.

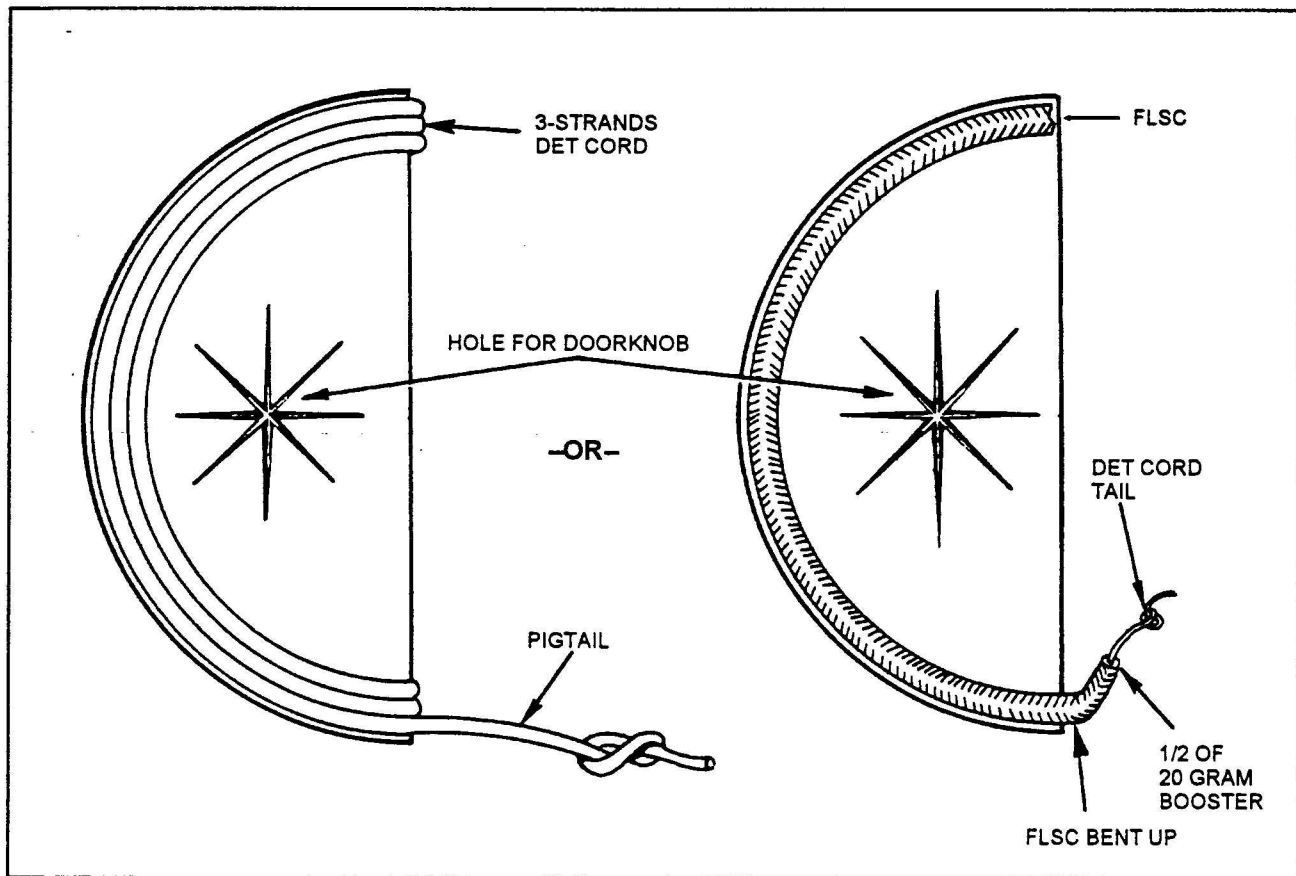


Figure M-7. Doorknob charge.

## INFANTRY AND ARMOR SMALL-UNIT ACTIONS DURING MOUT

*The first and most fundamental lesson learned from recent US and allied operations in built-up areas is the value of the fully integrated combined arms team. There is no denying the value of light infantry forces during MOUT. However, combat or OOTW in urban areas never should be considered a pure infantry task. Urban combat by units composed entirely of infantrymen is a historical anomaly. Across the spectrum of combat action in urban areas, powerful combined arms teams produce the best results. The actual composition of these teams must be determined based on a careful analysis by commanders at all levels. Light infantry units operating alone suffer from critical shortcomings that can be compensated for only by appropriate task organization with mechanized infantry, armor, and engineers. These teams must be supported by closely integrated aviation, fire support, communication, and logistical elements.*

### **N-1. STRENGTHS, WEAKNESSES, AND EMPLOYMENT CONSIDERATIONS FOR SMALL COMBINED ARMS TEAMS**

Because of the decentralized, fragmented nature of both OOTW and conventional battles in urban areas, dismounted infantrymen will always represent the bulk of any successful force. At the small-unit tactical level, light infantry forces have disadvantages that can be compensated for by mechanized infantry or armor units. Conversely, tanks and mechanized forces face problems in the confines of urban areas that place them at a severe disadvantage when operating alone. Only together can these forces accomplish their mission with minimal casualties while avoiding unnecessary collateral damage.

a. Light infantry forces lack heavy supporting firepower, protection, and long-range mobility. Armored forces, on the other hand, can deliver devastating fires, are fully protected against antipersonnel mines, fragments, and small arms, and have excellent mobility along unblocked routes.

b. Crewmen in armored vehicles have poor all-round vision through their vision blocks; they are easily blinded by smoke or dust. Tanks cannot elevate or depress their weapons enough to engage targets very close to the vehicle or those high up in tall buildings. Dismounted infantrymen have excellent all-round vision and can engage targets with small arms fire under almost all conditions.

c. Infantry small-arms fire within a building can eliminate resistance without seriously damaging the structure. Heavy fires from armored vehicles cause unwanted collateral damage or can destabilize basic structures.

d. If isolated or unsupported by dismounted infantry, armored vehicles (with the possible exception of the heavily protected main battle tank) are vulnerable to enemy hunter/killer teams firing light and medium antiarmor weapons. Armored vehicle gunners cannot easily identify enemy targets unless the commander exposes himself to fire by opening his hatch, or dismounted infantrymen direct the gunner onto the target.

e. Armored vehicles are noisy. Therefore, there is little chance of them arriving in an area undetected. Dismounted infantrymen can move stealthily into position without alerting the enemy. Armored vehicles can be blocked by improvised barricades, narrow streets and alleyways, or large amounts of rubble. Dismounted infantrymen can move over or around most urban terrain, regardless of the amount of damage to buildings.

f. Although they have limited fields of view at the typically short ranges normally encountered during MOUT, the thermal sights on armored vehicles can detect enemy activity through darkness and smoke, conditions that limit even the best-equipped dismounted infantry.

g. In some OOTW situations, armored vehicles project a psychological presence, an aura of invulnerability, that aids the friendly forces in deterring violence. Mounted patrols by armored vehicles can monitor large areas of a city while making their presence known to the entire populace, both friendly and unfriendly.

h. During cordon and search operations, armored vehicles can move mounted infantrymen rapidly to points where, together, they can dominate and isolate the cordoned area. With their long-range sights and weapons, armored vehicles can dominate large expanses of open area and thus free dismounted infantry to cordon closer terrain and visual dead space.

i. The mobile protected firepower of armored vehicles can be used to add security to resupply convoys and to extract wounded personnel under fire. The armored vehicle's smoke-generation capability can aid this and other small-unit actions.

## **N-2. INFANTRY-TANK/BFV COMBINED ARMS TEAM**

An effective use of armored combat vehicles in most tactical situations is en masse. Armored units operating in platoon, company, and battalion strength combine mobility, protection, and firepower to seize the initiative from the enemy and greatly aid friendly success. However, combat in some urban and built-up areas is so decentralized, and avenues of approach for vehicles so channelized, that massed armored vehicles cannot be easily employed. The heavy firepower, mobility, and armor protection of the tank or BFV is still needed; however, this situation calls for fewer armored vehicles employed over broader areas. The decision to disperse rather than mass armored vehicles should be made only after a careful consideration of the command's present METT-T situation and anticipated operations in the near future. Decentralized armor support greatly increases a small infantry unit's combat power. However, such dispersed vehicles cannot be easily and quickly reconcentrated. Their sudden removal from throughout the combat area will necessitate a

tactical pause for reorganization and a change of tactical tempo, which could disrupt the ongoing combat operation at a critical time.

a. Traditionally, armored vehicles participating as part of a small-unit combined arms team have been tanks working with small groups of dismounted infantrymen. However, the advent of the BFV (especially the heavily protected variants) has meant that successful infantry/tank-type teams can be created around a few BFVs and some dismounted infantry. The BFV lacks the tank's main gun, but it has a powerful weapons combination in the TOW/25-mm/coax system. Unless specifically noted, the following discussion of infantry/tank teams also includes infantry/BFV and infantry/Sheridan teams. When the Armored Gun System (AGS) is fielded, it will replace the Sheridan armored vehicle in this role. Designed from the beginning to work closely with light infantry, the AGS will be an effective and powerful addition to the small-unit combined arms team.

b. The most common task organization of dispersed armor is to attach a tank platoon to an infantry company, with the platoon further subattached on the basis of a two-tank section to each of the lead rifle platoons. Individual tanks can be employed, but two-vehicle sections are preferred. A rifle squad is normally designated to work with each of the platoon's attached tanks.

c. Infantry/tank teams work together to bring the maximum combat power to bear on the enemy. The dismounted infantry provides the eyes and ears of the team. The infantry locates and identifies targets for the tank to engage. It maneuvers along covered and concealed routes to assault enemy elements fixed and suppressed by tank fire. It provides protection for the tank against attack by enemy dismounted infantry. Meanwhile, the tank provides heavy, continuous supporting fires against enemy strongpoints.

d. The dismounted infantry normally leads movement through built-up areas. The tanks follow and provide close overwatch. If the infantry discovers an enemy position or encounters resistance, the tank immediately responds with supporting fire to fix the enemy in place or suppress him and allow the infantry to develop the situation. After sufficient time to develop the situation or conduct short-range reconnaissance, the infantry squad leader directs the tank to move, if necessary, and identifies specific targets for the tank to engage.

e. Coordination between the tank commander and the squad leader must be close and continuous. The tank commander or driver may need to dismount and move, accompanied by the squad leader, to a position where the route or target can be better seen. Signals for initiating, shifting, or lifting fires must be understood by all. One of the greatest barriers to coordination and command and control in urban combat is the intense noise. Verbal commands should be backed up by simple, nonverbal signals.

f. The tank's on-board smoke generation system and its smoke grenade projectors may be used both to protect the tank from enemy fire and to provide concealment for the infantry forces as they either move across open areas or recover wounded. The use of smoke must be carefully coordinated. Although the tanks' sights can see through most smoke, dismounted infantrymen are at a significant disadvantage when enveloped in dense smoke clouds. The smoke

grenade launchers on the tank provide excellent, rapidly developed local smoke clouds, but the grenades produce burning fragments that are hazardous to infantrymen near the tank and that can ignite dangerous fires in urban areas.

g. Tanks and BFVs are valuable tools for assisting the assaulting forces isolate the objective area and seize a foothold. As the dismounted infantry then moves to clear the position and expand the foothold, the tanks are left behind. Impossible, the tanks should move to positions where their fires can be used to prevent enemy reinforcement and engage enemy forces withdrawing from the position. However, at this time the tank crew must be very alert. Because of the nonlinear nature of urban battles, enemy forces may move to the rear or flanks of the now-isolated tanks and destroy them. If a small element of dismounted infantry cannot be spared to remain with the tanks, both vehicles in the section should move to positions of cover and mutual support. Loaders and vehicle commanders should man their external machine guns and be alert, especially for enemy infantry approaching from above, the rear, or from the flanks.



## \* GLOSSARY

ADA	air defense artillery
AGS	Armored Gun System
ANGLICO	air naval gunfire liaison company
AP	armor-piercing, antipersonnel
APC	armored personnel carrier
APDS-T	armor-piercing discarding sabot—tracer
APFSDS	armor-piercing, fin-stabilized, discarding sabot
AT	antitank
ATGMs	antitank guided missiles
ATTN	attention
AXP	ambulance exchange point
BDAR	battle damage assessment and repair
BDU	battery display unit; battle dress uniform
BFV	Bradley fighting vehicle
BMNT	beginning morning nautical twilight
BMPs	Threat fighting vehicles
BTRs	Threat fighting vehicles
CA	civil affairs
CAS	close air support
CEV	combat engineer vehicle
CFV	combat fighting vehicle
CI	configuration item; command information; counterintelligence
CN	chloroacetone
COLT	combat observation and lasing team
CP	command post
CS	combat support, chemical smoke, Chlorobenzylidene malononitrile
CSS	combat service support
DA	Department of the Army
DEA	Drug Enforcement Agency
DPRE	displaced persons, refugee, and evacuee
DS	direct support
ECM	electronic countermeasures

EOD	explosive ordnance disposal
EPW	enemy prisoner of war
FA	field artillery
FAC	forward air controller
FAE	fuel air explosives
FASCAM	family of scatterable mines
FAST	Freight Automated System for Traffic Management forward area support team
FBI	Federal Bureau of Investigation
FCL	final coordination line
FEBA	forward edge of battle area
FIST	fire support team
FLIR	forward-looking infrared
FLSC	flexible linear shaped charge
FM	field manual; frequency modulation
FO	forward observer
FPF	final protective fire
FPL	final protective line
FRAGO	fragmentary order
FSB	final staging base
FSE	fire support element
FSO	fire support officer
G3	Assistant Chief of Staff, G3 (Operations and Plans)
G5	Assistant Chief of Staff, G5 (Civil Affairs)
GS	general support
GPS	global positioning system
GSR	ground surveillance radar
GRREG	graves registration
HC	hydrogen chloride
HE	high explosive
HEAT	high-explosive antitank
HEAT-MY	high-explosive antitank, multipurpose
HEI-T	high-explosive incendiary-tracer
HMMWV	high-mobility, multipurpose, wheeled vehicle
IAW	in accordance with

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ICM	improved capabilities missile
ID	identification
IPB	intelligence preparation of the battlefield
ITOW	improved TOW
ITV	improved TOW vehicle
J5	Plans and Policy Directorate
LAW	light antitank weapon
LCMS	laser countermeasure system
LD	line of departure
LIC	low-intensity conflict
LOGPAC	logistics package
LOS	line of sight
LTC	lieutenant colonel
MBA	main battle area
MCOO	modified, combined obstacle overlay
MDP	meteorological datum plane, main defensive position
MEDEVAC	medical evacuation
METT-T	mission, enemy, terrain, troops, and time available
MOPP	mission-oriented protective posture
MOUT	military operations on urbanized terrain
MP	military police
MRB	motorized rifle battalion
MRR	motorized rifle regiment
MSR	main supply route
NATO	North Atlantic Treaty Organization
NBC	nuclear, biological, chemical
NCA	national command authority
NCO	noncommissioned officer
NEO	noncombatant evacuation operations
NOE	nap-of-the-earth
NVD	night vision device
NVG	night vision goggles
OOTW	operations other than war
OP	observation post

OPCON	operational control
OPLAN	operation plan
OPORD	operation order
OPSEC	operational security
PA	public affairs
PAC	Personnel and Administration Center; plastic ammunition container
PDDA	power-driven decontaminating apparatus
PE	probable error
PEWS	platoon early warning system
POL	petroleum, oils, and lubricants
PSYOP	psychological operations
PW	prisoner of war
RCLR	recoilless rifle
REMs	remote sensors
ROE	rules of engagement
RP	reference point, red phosphorus
RPG	Threat antiarmor weapon
S1	Adjutant (US Army)
S2	intelligence officer
S3	Operations and Training Officer (US Army)
S4	Supply Officer (US Army)
S5	Civil Affairs Officer (US Army)
SALT	supporting arms liaison team
SAW	squad automatic weapon
SEAD	suppression of enemy air defenses
SEAL	sea-air-land team
SF	special forces
SIDPERS	Standard Installation/Division Personnel System
SMAW	shoulder-launched, multipurpose, assault weapon
SOF	special operations force
SOP	standing operating procedure
STB	supertopical bleach
SWAT	Special Weapons and Tactics (civilian police)
TAACOM	Theater Army Area Command

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TF	task force
TI	technical inspection; technical intelligence
TM	technical manual, team (graphics only)
TNT	trinitrotoluene
TOC	tactical operations center
TOW	tube-launched, optically tracked, wire-guided missile
TP-T	target practice-tracer
TRADOC	Training and Doctrine Command
TTP	tactics, technics, and procedures
UAV	unmanned aerial vehicle
UCMJ	Uniform Code of Military Justice
US	United States
USAF	United States Air Force
USMC	United States Marine Corps
USN	United States Navy
VT	variable time
WP	white phosphorous

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