

CHAPTER 4
DEFENSIVE OPERATIONS

Of the two patterns of defense, area and mobile, the area defense is the pattern most used since most of the reasons for defending a city are focused on retaining terrain. The mobile defense pattern is more focused on the enemy and the commander may decide to use it based on his estimate of the situation. In a built-up area, the defender must take advantage of the abundant cover and concealment. He must also consider restrictions to the attacker's ability to maneuver and observe. By using the terrain and fighting from well-prepared and mutually supporting positions, a defending force can inflict heavy losses on, delay, block, or fix a much larger attacking force.

Section I. DEFENSIVE CONSIDERATIONS

A commander must decide whether defending a built-up area is needed to successfully complete his mission. Before making his decision, the commander should consider the issues discussed herein.

4-1. REASONS FOR DEFENDING BUILT-UP AREAS

A commander should consider the following reasons for defending built-up areas.

a. Certain built-up areas contain strategic industrial, transportation, or economic complexes that must be defended. Capitals and cultural centers can be defended for strictly psychological or national morale purposes even if they do not offer a tactical advantage to the defender. Because of the sprawl of such areas, significant combat power is required for their defense. Thus, the decision to defend these complexes is made by political authorities or the theater commander.

b. The defender's need to shift and concentrate combat power, and to move large amounts of supplies over a wide battle area require that he retain vital transportation centers. Since most transportation centers serve large areas, the commander must defend all of the built-up area to control such centers.

c. The worldwide increase in sprawling built-up areas has made it impossible for forces conducting combat operations to avoid cities and towns. Most avenues of approach are straddled by small towns every few kilometers and must be controlled by defending forces. These areas can be used as battle positions or strongpoints. Blocked streets covered by mortar and or artillery fire can canalize attacking armor into mined areas or zones covered by antiarmor fire. If an attacker tries to bypass a built-up area, he may encounter an array of tank-killing weapons. To clear such an area, the attacker must sacrifice speed and momentum, and expend many resources. A city or town can easily become a major obstacle.

d. Forces can be concentrated in critical areas. Due to the tactical advantages to the defender, a well-trained force defending a built-up area can inflict major losses on a numerically superior attacker. The defender can conserve the bulk of his combat power so that it is available for use in open terrain. The defenders remaining in built-up areas perform an economy-of-force role.

e. Forces can be well concealed in built-up areas. Aerial photography, imagery, and sensory devices cannot detect forces deployed in cities. CPs,

reserves, CSS complexes, and combat forces emplaced well in built-up areas make them hard to detect.

4-2. REASONS FOR NOT DEFENDING BUILT-UP AREAS

The commander should consider the following reasons for not defending built-up areas.

a. The location of the built-up area does not support the overall defensive plan. If the built-up area is too far forward or back in a unit's defensive sector, is isolated, or is not astride an enemy's expected avenue of approach, the commander may choose not to defend it.

b. Nearby terrain allows the enemy to bypass on covered or concealed routes. Some built-up areas, mainly smaller ones, are bypassed by main road and highway systems. A built-up area that can be easily bypassed normally will be.

c. Structures within the built-up area do not adequately protect the defenders. Extensive areas of lightly built or flammable structures offer little protection to the defender. Built-up areas near flammable or hazardous industrial areas, such as refineries or chemical plants, may not be defended.

d. Dominating terrain is close to the built-up area. If the built-up area can be dominated by an enemy force occupying close terrain, the commander may choose to defend from there rather than the built-up area. This applies mainly to small built-up areas such as a village.

e. Better fields of fire exist outside the built-up area. The commander may choose to base all or part of his defense on the long-range fields of fire that exist outside a built-up area. This applies mainly to armor-heavy forces defending sectors with multiple, small, built-up areas surrounded by farm areas.

f. The built-up area has cultural, religious, or historical significance. The area may have been declared an "open city," in which case, by international law, it is demilitarized and must be neither defended nor attacked. The attacking force must assume civil administrative control and treat the civilians as noncombatants in an occupied country. The defender must immediately evacuate and cannot arm the civilian population. A city can be declared open only before it is attacked. The presence of large numbers of noncombatants, hospitals, or wounded personnel may also affect the commander's decision not to defend a built-up area.

Section II. CHARACTERISTICS OF BUILT-UP AREAS

The defense of a built-up area should be organized around key terrain features, buildings, and areas that preserve the integrity of the defense and that provide the defender ease of movement. The defender must organize and plan his defense by considering obstacles, avenues of approach, key terrain, observation and fields of fire, cover and concealment, fire hazards, and communications restrictions.

4-3. OBSTACLES

A city itself is an obstacle since it canalizes and impedes an attack. Likely avenues of approach should be blocked by obstacles and covered by fire. Barriers and obstacles should be emplaced in three belts.

a. The first obstacle belt is at the nearest buildings across from and parallel to the main defensive position (MDP). This belt consists of wire and improvised barriers (to include inside buildings, in subterranean avenues of

approach, and outside in open areas), danger areas, and dead space. These barriers and obstacles should be heavily booby trapped and covered by long-range fires as appropriate. This belt impedes enemy movement, breaks up and disorganizes attack formations, and inflicts casualties.

b. The second obstacle belt is placed between the first belt and the MDP buildings, but out of hand grenade range from defensive positions. It impedes movement, channelizes the enemy into the best fields of fire, breaks up attack formations, and inflicts casualties. This belt is not meant to stop enemy soldiers permanently. It should be constructed efficiently to give the most benefit—not to be an impenetrable wall. It consists mainly of wire obstacles, improvised barriers, road craters, and mine fields. It should be booby trapped heavily (including trip-wire-activated Claymores). Triple-strand concertina is placed along the machine-gun FPL (as designated earlier with engineer tape) to slow the enemy on the FPL and allow the machine gun to be used effectively.

c. The third obstacle belt is the defensive positions denial belt. It consists of wire obstacles placed around, through, and in the defensive buildings and close-in mine fields as well as in subterranean accesses. It impedes and complicates the enemy's ability to gain a foothold in the defensive area. It should be booby trapped, and Claymores should be used extensively, both trip wire activated and command detonated. The booby traps and Claymores should be placed where they will not cause friendly casualties.

d. All avenues of approach (surface and subsurface) must be denied. Units must not overlook the use of field-expedient obstacles such as cars, light poles, and soon (Figure 4-1), or the emplacement of antipersonnel and antitank mines.

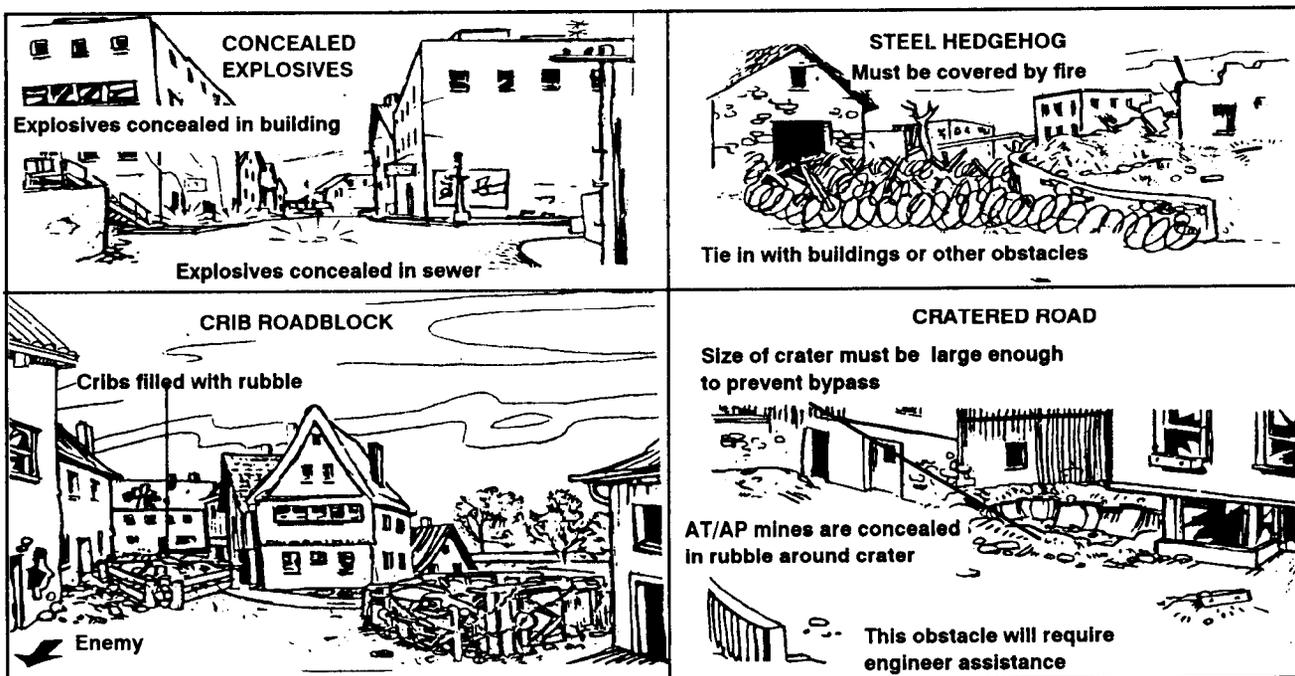


Figure 4-1. Example of field-expedient obstacles.

4-4. AVENUES OF APPROACH

The defender must not only consider the conventional avenues of approach into and out of the city but also the avenues within built-up areas that are above and below ground level. The defender normally has the advantage. He knows the city and can move rapidly from position to position through buildings and underground passages.

4-5. KEY TERRAIN

Key terrain is anyplace where seizure, retention, or control affords a marked advantage to either enemy or friendly forces. Primary examples of key terrain are bridges over canals or rivers, building complexes, public utilities or services, or parks. Built-up areas are unusual in that the population of the area itself may be considered key terrain. The identification of key terrain allows the defender to select his defensive positions and assists in determining the enemy's objectives.

4-6. OBSERVATION AND FIELDS OF FIRE

The defender must position weapons to obtain maximum effect and mutual supporting fire. This allows for long-range engagements out to the maximum effective ranges. Artillery FOs should be well above street level to adjust fires on the enemy at maximum range. Fires and FPFs should be preregistered on the most likely approaches to allow for their rapid shifting to threatened areas.

4-7. COVER AND CONCEALMENT

The defender should prepare positions using the protective cover of walls, floors, and ceilings. Soldiers should always improve positions using materials at hand. When the defender must move, he can reduce his exposure by—

- Using prepared breaches through buildings.
- Moving through reconnoitered and marked underground systems.
- Using trenches and sewage systems.
- Using the concealment offered by smoke and darkness to cross open areas.

To accomplish his mission, the attacker must advance by crossing streets and open areas between buildings where he is exposed to fires from concealed weapons positions.

4-8. FIRE HAZARDS

The defender's detailed knowledge of the terrain permits him to avoid areas that are likely to be fire hazards. All cities are vulnerable to fire, especially those with many wooden buildings. The defender can deliberately set fires—

- To disrupt and disorganize the attackers.
- To canalize the attackers into more favorable engagement areas.
- To obscure the attacker's observation.

4-9. COMMUNICATIONS RESTRICTIONS

Wire is the primary means of communication for controlling the defense of a city and for enforcing security. However, wire can be compromised if interdicted by the enemy. Radio communication in built-up areas is normally degraded by structures and a high concentration of electrical power lines.

The new family of radios may correct this problem, but all units within the built-up area may not have these radios. Therefore, radio is an alternate means of communication. Messengers can be used well as another means of communication. Visual signals may also be used but are often not effective because of the screening effects of buildings, walls, and so forth. Signals must be planned, widely disseminated, and understood by all assigned and attached units. Increased noise makes the effective use of sound signals difficult.

Section III. FACTORS OF METT-T

Procedures and principles for planning and organizing the defense of a built-up area are the same as for other defensive operations. In developing a defensive plan, the defender considers METT-T factors with emphasis on fire support, preparation time, work priorities, and control measures. Planning for the defense of a city must be detailed and centralized.

4-10. MISSION

The commander must receive, analyze, and understand the mission before he begins planning. He may receive the mission as a FRAGO or formal OPORD, and must analyze all specified and implied tasks.

4-11. ENEMY

The commander must also analyze the type of enemy he may encounter. If the attacker is mostly dismounted infantry, the greatest danger is allowing him to gain a foothold. If the attacker is mostly armor or mounted motorized infantry, the greatest danger is that he will mass direct fire and destroy the defender's positions.

Intelligence gathering for defensive operations is not limited to only studying the enemy. Commanders must emphasize obtaining and using all intelligence. The items of intelligence peculiar to combat in built-up areas are discussed in Chapter 2. They include:

- Street, water, and sewer plans.
- Key installations and facilities.
- Key civilians.
- Civilian police and paramilitary forces.
- Sources of food.
- Communications facilities and plans.
- Power stations.

4-12. TERRAIN

Terrain in built-up areas is three-dimensional: ground level (streets and parks), above ground (buildings), and below ground (subways and sewers). Analysis of all man-made and natural terrain features is critical when planning to defend on built-up terrain. The commander's defensive plan is affected by the type of built-up area he will be operating in. (See Chapter 1.)

a. Villages.

(1) Villages are often on chokepoints in valleys, dominating the only high-speed avenue of approach through the terrain. If the buildings in such a village are well constructed and provide good protection against both

direct and indirect fires, a formidable defense can be mounted by placing a company in the town, while controlling close and dominating terrain with other battalion elements.

(2) If the terrain allows easy bypass and there are no other villages on defendable terrain within a mutually supporting distance, units may be unwise to defend it. This would allow friendly forces to be easily bypassed and cut off (Figure 4-2).

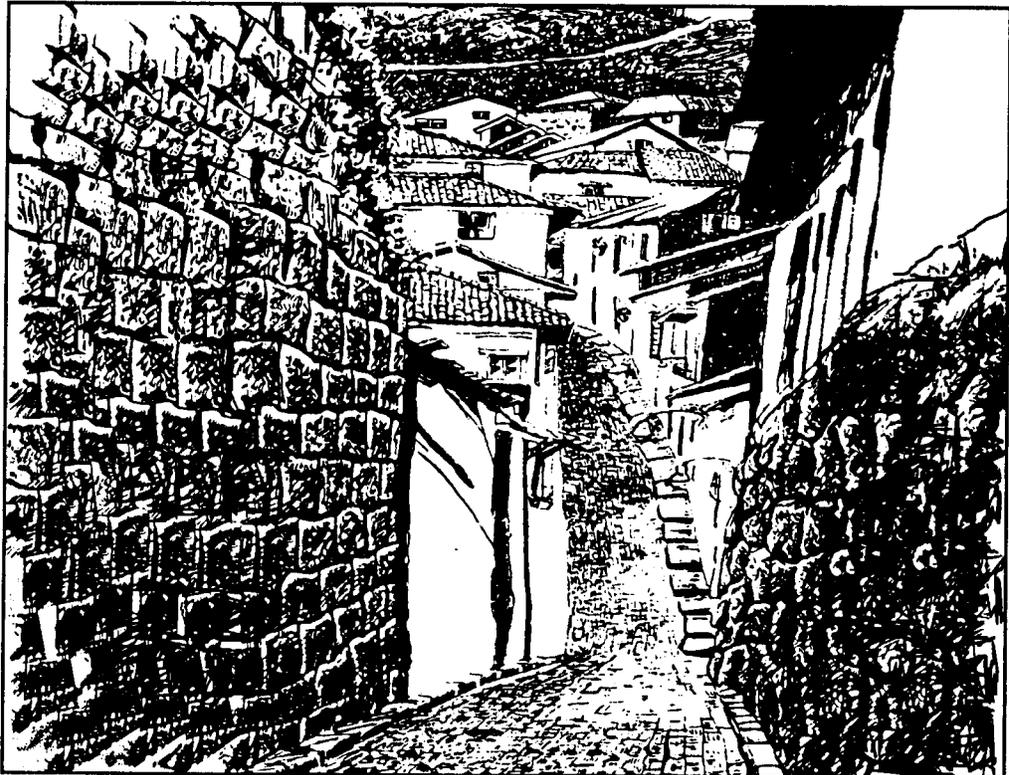


Figure 4-2. Villages.

(3) Villages on the approaches to large towns or cities may be used by commanders to add depth to the defense or to secure the flanks. These villages are often characterized by clusters of stone, brick, or concrete houses and buildings. Company-sized battle positions can be established in these small villages to block approaches into the main defensive positions.

b. Strip Areas.

(1) Strip areas consist of houses, stores, and factories and are built along roads or down valleys between towns and villages. They afford the defender the same advantages as villages.

(2) If visibility is good and enough effective fields of fire are available, a unit acting as a security force need occupy only a few strong positions spread out within the strip. This will deceive the enemy, when engaged at long ranges, into thinking the strip is an extensive defensive line. Strip areas often afford covered avenues of withdrawal to the flanks once the attacking force is deployed and before the security force becomes decisively engaged (Figure 4-3).



Figure 4-3. Strip areas.

c. Towns and Cities.

(1) A small force can gain combat power advantage when defending a small city or town that is a chokepoint if it places tanks, BFVs, TOWs, and Dragons on positions dominating critical approaches. To deny the enemy the ability to bypass the town or city, the defending force must control key terrain and coordinate with adjacent forces. Reserve forces should be placed where they can quickly reinforce critical areas. Obstacles and minefield assist in slowing and canalizing the attacker.

(2) Finding positions in towns and cities that provide both good fields of fire and cover is often difficult. The forward edges of a town usually offer the best fields of fire but can be easily targeted by enemy overwatch and supporting fire. These areas often contain residential buildings constructed of light material. Factories, civic buildings, and other heavy structures, which provide adequate cover and are more suitable for a defense, are more likely to be found deeper in the town and have limited fields of fire on likely avenues of approach.

(3) Since the forward edge of a town is the obvious position for the defender, it should be avoided. However, the defender can setup his position there if the terrain limits the enemy's ability for engagement or it contains strongly constructed buildings that give defending units adequate protection.

(4) A force may initially be assigned battle positions on the forward edge of the town. Its mission is to provide early warning of the enemy's advance, to engage the enemy at long range, and to deceive the enemy as to the true location of the defense. This force should withdraw in time to avoid decisive engagement. If there is limited observation from the forward edge, a force should be positioned on more favorable terrain forward or to the flanks of the town to gain better observation and to engage the enemy at long range.

(5) To prevent airmobile or airborne landings within the city or town, the commander must cover probable LZs and DZs, such as parks, stadiums, or large rooftops and heliports with obstacles or fire (Figure 4-4).

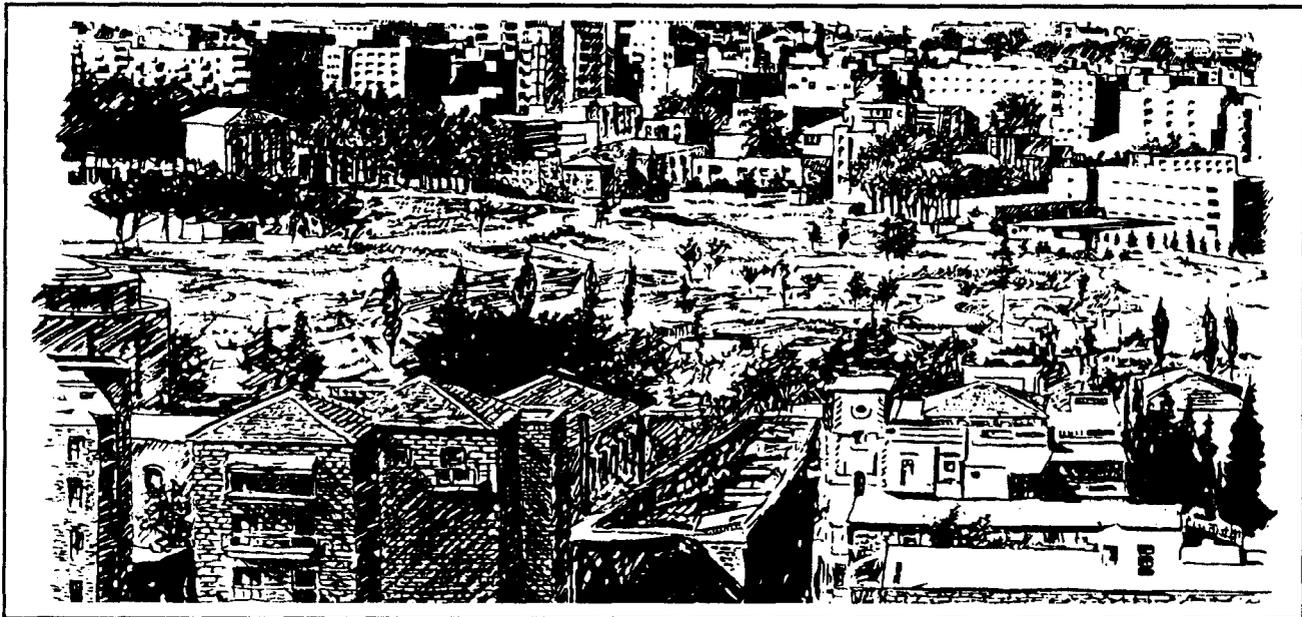


Figure 4-4. Towns and cities.

d. Large Built-Up Areas.

(1) In large built-up areas the commander must consider that the terrain is restrictive due to large buildings that are normally close together. This requires a higher density of troops and smaller defensive sectors than in natural open terrain. Units occupy defensive frontages about one-third the size of those in open areas. An infantry company, which might occupy 1,500 to 2,000 meters in open terrain, is usually restricted to a frontage of 300 to 800 meters in built-up areas. The density of buildings and rubble and street patterns will dictate the frontage of the unit (Table 4-1).

UNIT	FRONTAGES	DEPTHS
Battalion or Battalion TF	4 to 8 blocks	3 to 6 blocks
Company or Company Team	2 to 4 blocks	2 to 3 blocks
Platoon	1 to 2 blocks	1 block
<p>NOTE: An average city block has a frontage of about 175 meters. These minimum figures apply in areas of dense, block-type construction; multistory buildings; and underground passages.</p>		

Table 4-1. Approximate frontages and depths in large built-up areas.

(2) In a large built-up area, a battalion is given a sector to defend and normally establishes a series of defensive positions. Unlike villages or towns, natural terrain close to the built-up area is not usually available for the commander to integrate into his plan. Although mutual support between positions should be maintained, built-up terrain often allows for infiltration routes that the enemy may use to pass between positions. Therefore, the defender must identify the following:

- Positions that enable him to place surprise fires on the infiltrating enemy.
- Covered and concealed routes for friendly elements to move between positions (subways and sewers).
- Structures that dominate large areas.
- Areas such as parks, boulevards, rivers, highways, and railroads where antiarmor weapons have fields of fire.
- Firing positions for mortars.
- Command locations that offer cover, concealment, and ease of command and control.
- Protected storage areas for supplies.

(3) Buildings that add most to the general plan of defense are chosen for occupation. Mutual support between these positions is vital to prevent the attacker from maneuvering and outflanking the defensive position, making it untenable. Buildings chosen for occupation as defensive positions should—

- Offer good protection.
- Have strong floors to keep the structure from collapsing under the weight of debris.
- Have thick walls.
- Be constructed of nonflammable materials (avoid wood).
- Be strategically located (corner buildings and prominent structures).
- Be adjacent to streets, alleys, vacant lots, and park sites. (These buildings usually provide better fields of fire and are more easily tied in with other buildings.)

4-13. TROOPS AVAILABLE

Employment of troops in built-up areas depends on many factors governed by METT-T and on the mission.

a. **Employment of Squads.** Squads are usually employed abreast so that they all can fire toward the expected direction of attack. In a built-up area, squads may be separated by rooms within buildings or be deployed in different buildings. Squad positions must be mutually supporting and allow for overlapping sectors of fire, even if buildings or walls separate the positions (Figure 4-5, page 4-10).

b. **Employment of Platoons.** Once the commander has decided where to defend, he should select platoon battle positions or sectors that block or restrict the enemy's ability to maneuver and control key areas. The frontage

for a platoon is about one to two city blocks long. Along with his primary and alternate positions, the platoon leader normally selects one supplementary position to reorient his defense to meet enemy threats from another direction.

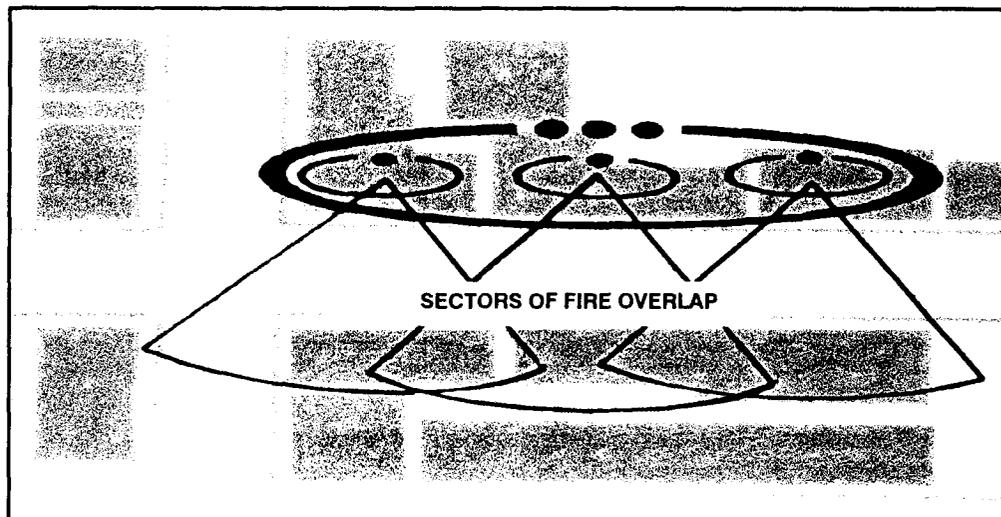


Figure 4-5. Sectors of fire.

c. **Employment of Companies.** Battalion commanders employ their companies in battle positions or sectors. The frontage of a company or company team defending in a built-up area is normally two to four city blocks long (300 to 800 meters). Depending on the type of built-up area, a company may be employed on the forward edge of the flanks of the area. This forces the enemy to deploy early without decisive engagement since it deceives the enemy as to the true location of the main defense. Other companies may then be employed in a series of strongpoints in the center of the city or town. In all cases, mutual support between positions is vital. Companies should also have designated alternate and supplementary positions.

d. **Employment of the Reserve.** The commander's defensive plan must always consider the employment of a reserve. The reserve force should be prepared to counterattack to regain key positions, to block enemy penetrations, to protect the flanks, or to assist by fire in the disengagement and withdrawal of endangered positions. For combat in a built-up area, a reserve force—

- Normally consists of infantry.
- Must be as mobile as possible.
- May be a platoon or squad at company level or one platoon at battalion level.
- May be supported by tanks.

e. **Employment of Tanks and BFVs.** The commander should employ tanks and BFVs to take advantage of their long-range fires and mobility. Built-up areas restrict the mobility of tanks and BFVs and make them vulnerable to the antiarmor weapons of the enemy infantry.

(1) When tanks and BFVs are employed in the defense of a city, infantry should be positioned to provide security against close antitank fires and to

detect targets for the armored vehicles. Tanks and BFVs should be assigned primary, alternate, and supplementary positions, as well as primary and alternate sectors. BFVs and antitank weapons should supplement tank fires.

(2) Tanks and BFVs should be located on likely avenues of approach to take advantage of their long-range fires. They may be—

- Positioned on the edge of the city in mutually supporting positions.
- Positioned on key terrain on the flanks of towns and villages.
- Used to cover barricades and obstacles by fire.
- Part of the reserve.

(3) Tanks and BFVs are normally employed as a platoon. However, sections and individual tanks and BFVs may be employed with infantry platoons or squads. This provides tanks and BFVs with the close security of the infantry. Tanks and BFVs provide the commander with a mobile force to respond quickly to enemy threats on different avenues of approach.

f. **Employment of Fire Support.** Fire planning must be comprehensive due to the proximity of buildings to targets, minimum range restrictions, and repositioning requirements. Mortar and artillery fires are planned on top of and immediately around defensive positions for close support.

(1) Artillery fire support may be used in the director indirect fire role. Artillery fire should be used—

- To suppress and blind enemy overwatch elements.
- To disrupt or destroy an assault.
- To provide counterbattery fire.
- To support counterattacks.
- To provide direct fire when necessary.

(2) Mortars at battalion and company level are employed to maximize the effect of their high-angle fires. They should be used to engage—

- Enemy overwatch positions.
- Enemy infantry before they seize a foothold.
- Targets on rooftops.
- Enemy reinforcements within range.

(3) Final protective fires are planned to stop dismounted assaults in front of the defensive positions. Fires within the city are planned along likely routes of advance to destroy the enemy as he attempts to deepen a penetration.

(4) At battalion level, the commander should establish priorities of fire based on enemy avenues of approach and threat systems that present the greatest danger to the defense. For example, during the attacker's initial advance, tanks, BMPs, and overwatching elements are the greatest threat to the defense. ATGMs should concentrate on destroying tanks first, then BMPs. Artillery and mortar fires should suppress and destroy enemy ATGMs and over-watch positions and or elements. If enemy formations secure a foothold, priority is shifted to the destruction of enemy forces within the penetration.

(5) As the enemy attack progresses in the city, fires are increased to separate infantry from supporting tanks and fighting vehicles. During this phase, friendly artillery concentrates on attacking infantry, counterfire missions, and the destruction of reinforcements that are approaching the city.

(6) When initiated, counterattacks are given priority of supporting fires. When artillery is firing the missions as mentioned above, it must remain mobile and be prepared to displace to preplanned positions to avoid enemy counterbattery fire.

(7) The battalion mortar platoon may be initially positioned forward in support of the reconnaissance platoon. After withdrawal of the reconnaissance platoon, the mortar platoon is positioned where it can support the whole battalion.

(8) At company and platoon level, fire plans include fires of organic, attached, and supporting weapons. The company commander also plans his own mortar and artillery fires on top of and immediately around his battle positions for close support.

(9) Based on the location of platoon positions in relation to the most likely avenues of advance, the company commander should assign FPFs to platoon leaders. Each rifle platoon leader then assigns his machine guns sectors of fire and FPLs. These positions should be selected to provide interlocking grazing fire and mutual support between adjacent units. FPLs are fired on planned signals from the platoon forward observers. Proposed FPLs must be “walked out” to determine the extent of grazing fire available and to locate dead space, which can be covered by—

- Sniper fire.
- Grenade launchers.
- Mines and booby traps.
- Indirect fires.

(10) Air defense assets available to the commander, such as Stinger and Vulcan, are normally employed to ensure all-round air defense. The lack of good firing positions for long-range air defense missile systems in the built-up area may limit the number of deployed weapons. In the defense, weapons systems may have to be winched or airlifted into positions. Rooftops and parking garages are good firing positions because they normally offer a better line-of-sight. Stingers and Vulcans can be assigned the missions of protecting specific positions or in general support of the battalion.

g. **Employment of Engineers.** Engineers are employed under battalion control or attached to companies and platoons. Normally, one engineer platoon or company supports a battalion or battalion task force. Commanders must consider engineer tasks that enhance survivability, mobility, and countermobility. Tasks that engineers can accomplish in the defense of a built-up area include:

- Constructing obstacles and rubble.
- Clearing fields of fire.
- Laying mines.
- Preparing routes to the rear.
- Preparing fighting positions.

h. Employment of the Antiarmor Company. The antiarmor company normally supports the battalion security force, providing long-range antiarmor fires forward of the main defense. Separate antiarmor sections may be attached to companies to cover likely armor approaches. Once the security force withdraws, the antiarmor company is normally employed in GS of the battalion. If the threat is not armored, or if the terrain prevents the use of the TOW weapons system, antiarmor platoons and companies in light airborne and air assault units can mount MK 19 grenade launchers and .50 caliber machine guns to support the defending units.

i. Employment of the Reconnaissance Platoon. Depending on the situation and terrain, the battalion reconnaissance platoon may provide a security force forward of the built-up area to give the commander early warning of enemy activity. Upon withdrawal of the security force, the reconnaissance platoon may be given the mission to ensure flank or rear security, to occupy a defensive sector (or battle position), or to stay in reserve.

j. Employment of Ground Surveillance Radar. If attached, GSR is best employed on the outskirts of built-up areas because of the line-of-sight problems within the area. During limited visibility, if suitable avenues exist, GSR can be placed to monitor sectors. Because of the normal ranges found in built-up areas and the likely narrowness of the sector ranges, GSR can be vulnerable to detection and direct fire. Cross vectoring is important in this environment.

4-14. TIME AVAILABLE

The commander must organize and establish priorities of work, depending upon the time available. Many tasks can be accomplished at the same time, but priorities for preparation should be according to the commander's order. In defensive operations, an example priority of work sequence follows.

a. Establish Security. The unit should quickly establish all-round security by placing forces on likely approaches. Troop positions should have at least one soldier to provide security during all preparations. The reconnaissance and counterreconnaissance plan should be emphasized.

b. Assign Sectors of Responsibility. Boundaries define sectors of responsibility. They include areas where units may fire and maneuver without interference or coordination with other units. Responsibility for primary avenues of approach should never be split. In areas of semidetached construction, where observation and movement are less restricted, boundaries should be established along alleys or streets to include both sides of a street in a single sector. Where buildings present a solid front along streets, boundaries may have to extend to one side of the street (Figure 4-6, page 4-14).

c. Clear Fields of Fire. In built-up areas, commanders may need to rubble certain buildings and structures to provide greater protection and fields of fire to the defender. If the ceiling of a lower-story room can support the weight of the rubble, collapsing the top floor of a building before the battle starts may afford better protection against indirect fires. Rubbling an entire building can increase the fields of fire and create an obstacle to enemy movement. Defenders must be careful, however. Rubbling buildings too soon (or too many) may give exact locations and destroy the cover from direct fire. Rubbled buildings may also interfere with planned routes of withdrawal or counterattack.

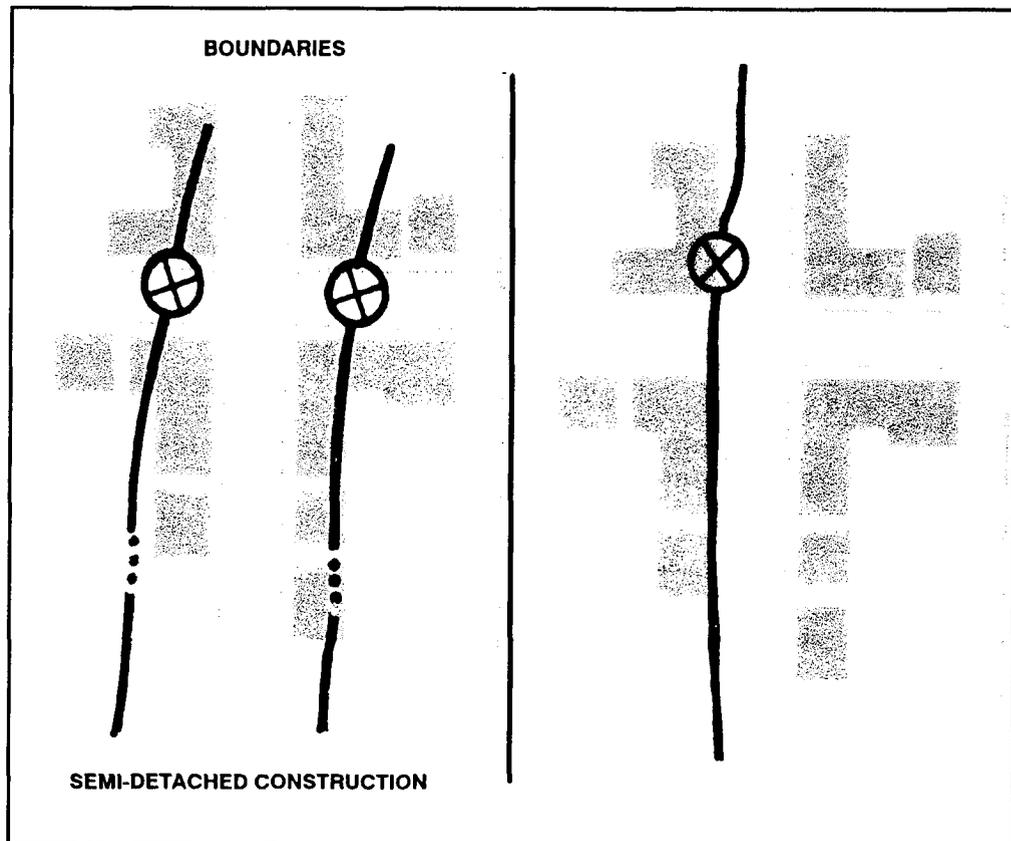


Figure 4-6. Boundaries in built-up areas.

d. **Select and Prepare Initial Fighting Positions.** The commander should select positions in depth. The unit should prepare positions as soon as troops arrive and continue preparing as long as positions are occupied. Enemy infiltration or movement sometimes occurs between and behind friendly positions. Therefore, each position must be organized for all-round defense. The defender should also—

(1) Make minimum changes to the outside appearance of buildings where positions are located.

(2) Screen or block windows and other openings to keep the enemy from seeing in and tossing in hand grenades. This must be done so that the enemy cannot tell which openings the defenders are behind.

(3) Remove combustible material to limit the danger of fire. Fires are dangerous to defenders and create smoke that could conceal attacking troops. For these reasons, defenders should remove all flammable materials and stockpile firefighting equipment (water, sand, and so forth). The danger of fire also influences the type of ammunition used in the defense. Tracers or incendiary rounds should not be used extensively if threat of fire exists.

(4) Turn off electricity and gas. Both propane and natural gas are explosive. Natural gas is also poisonous and is not filtered by a protective mask. Propane gas, although not poisonous, is heavier than air. If it leaks into an enclosed area, it displaces the oxygen and causes suffocation. Gas mains and electricity should be shut off at the facility that serves the city.

(5) Locate positions so as not to establish a pattern. The unit should avoid obvious firing locations like church steeples.

(6) Camouflage positions.

(7) Reinforce positions with materials available such as beds, furniture, and so forth.

(8) Block stairwells and doors with wire or other material to prevent enemy movement. Create holes between floors and rooms to allow covered movement within a building.

(9) Prepare range cards, fire plans, and sector sketches.

(10) Emplace machine guns in basements. When basements are not used, they should be sealed to prevent enemy entry.

(11) Establish an extra supply of Class V and medical supplies.

e. **Establish Communications.** Commanders should consider the effects of built-up areas on communications when they allocate time to establish communications. Line-of-sight limitations affect both visual and radio communications. Wire laid at street level is easily damaged by rubble and vehicle traffic. Also, the noise of built-up area combat is much louder than in other areas, making sound signals difficult to hear. Therefore, the time needed to establish an effective communications system may be greater than in more conventional terrain. Commanders should consider the following techniques when planning for communications:

(1) If possible, lay wire through buildings for maximum protection.

(2) Use existing telephone systems. Telephones are not always secure even though many telephone cables are underground.

(3) Emplace radios and retransmission sites on the second or third floor of a building.

(4) Use messengers at all levels since they are the most secure means of communications.

f. **Emplace Obstacles and Mines.** To save time and resources in preparing the defense, commanders must emphasize using all available materials (automobiles, railcars, rubble) to create obstacles. Civilian construction equipment and materials must be located and inventoried. This equipment can be used with engineer assets or in place of damaged equipment. Coordination must be made with proper civilian officials before use. Engineers must be able to provide advice and resources as to the employment of obstacles and mines. The principles for employing mines and obstacles do not change in the defense of a built-up area; however, techniques do change. For example, burying and concealing mines in streets are hard due to concrete and asphalt. Obstacles must be tied in to buildings and rubble areas to increase effectiveness and to canalize the enemy. FASCAM may be effective on the outskirts of a city or in parks; however, in a city core, areas may be too restrictive (see Appendix G).

g. **Improve Fighting Positions.** When time permits, all positions, to include supplementary and alternate positions, should be reinforced with sandbags and provide overhead cover. Timely and accurate support from attached engineers helps in this effort (see Appendix E).

h. **Establish and Mark Routes Between Positions.** Reconnaissance by all defending elements should help select routes for use by defenders moving between positions. Movement is crucial in fighting in built-up areas. Early selection and marking of routes adds to the defender's advantages.

Section IV. COMMAND AND CONTROL

In all defensive situations, the commander should position himself well forward so that he can control the action. In a built-up environment, this is even more critical due to obstacles, poor visibility, difficulty in communication, and intense fighting.

Graphic control measures common to other tactical environments are also used in combat in built-up areas. Streets are ideal for phase lines. These and other control measures ensure coordination throughout the chain of command.

4-15. COMMAND POST FACILITIES

Command post facilities should be located underground. Their vulnerability requires all-round security. Since each facility may have to secure itself, it should be near the reserve unit for added security. When collocated with another unit, command post facilities may not need to provide their own security. Also, a simplified organization for command posts is required for ease of movement. Since rubble often hinders movement of tracked and wheeled vehicles, battalion and company headquarters must be prepared to backpack communications and other needed equipment for operations.

4-16. ORGANIZATION OF THE DEFENSE

The battlefield is divided into three operational areas—deep, close, and rear. At the battalion level, operations are conducted in the close operational area. The defense is organized into three areas—the security force area, main battle area, and rear area. A battalion defending in built-up areas may have missions in any one of these areas, depending on the mission of the brigade or division (Figure 4-7).

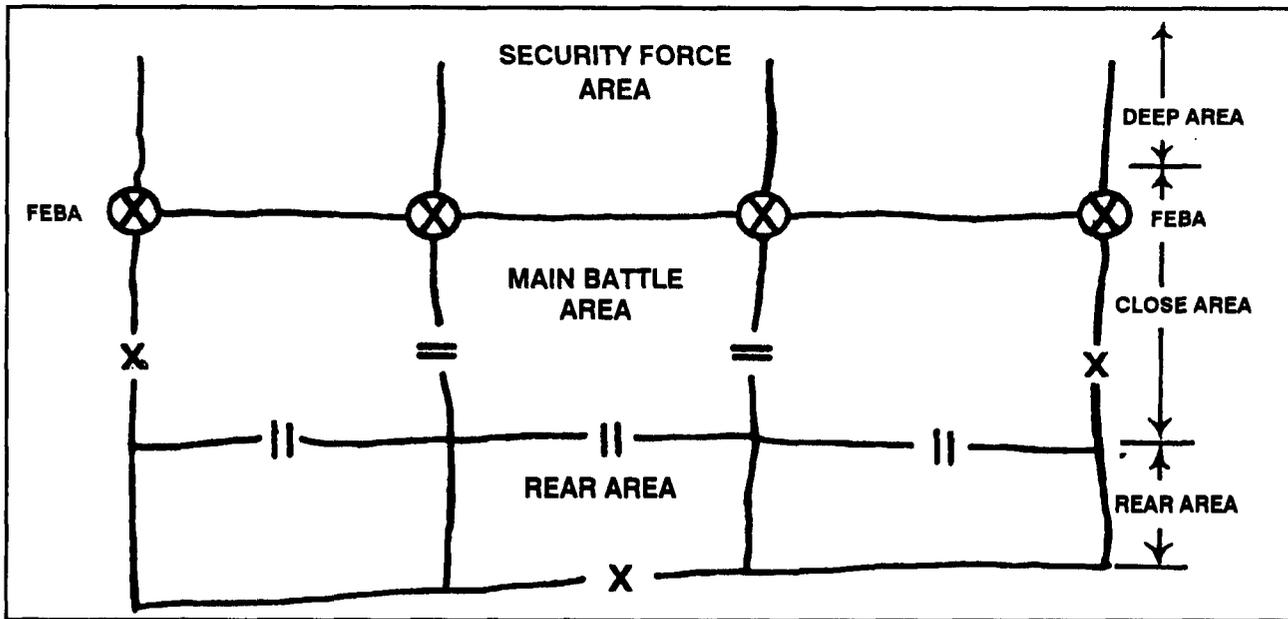


Figure 4-7. Organization of the battlefield.

a. **Security Operations.** The defensive battle begins with a combined arms force conducting security operations well forward of the main body. Security operations include screening operations, guard operations, and when, augmented with additional CS and CSS assets, covering force operations. The commander decides which operation is appropriate based on the factors of METT-T. The designated force uses all available combat power to destroy the enemy and slow his momentum. Artillery, tactical air, and attack helicopters are employed to fight the initial battle.

(1) Security operations add to the defense by—

- Alerting the defense to the strength, location, and general direction of the enemy's main and supporting attacks.
- Delaying enemy first-echelon detachments.
- Initiating early engagement of enemy forces.
- Deceiving the enemy as to the true location of the main defense force.

(2) The withdrawal of the security forces must not result in an easing of pressure on the enemy. The built-up area environment may complicate battle handover from the security force to the main battle area force. However, this transition must be accomplished smoothly to prevent the enemy from gaining momentum.

b. **Main Battle Area.** The decisive battle is fought in the MBA. Depending on the Threat, the battalion commander may deploy companies on the forward edges of the city or in battle positions in depth. In either case, the defense is made stronger by including forces that are defending on close terrain on the flanks into the defensive scheme. The battalion commander normally employs a security force to the front to provide early warning and to deny the enemy intelligence on the battalion's defensive dispositions (counterreconnaissance) (Figure 4-8).

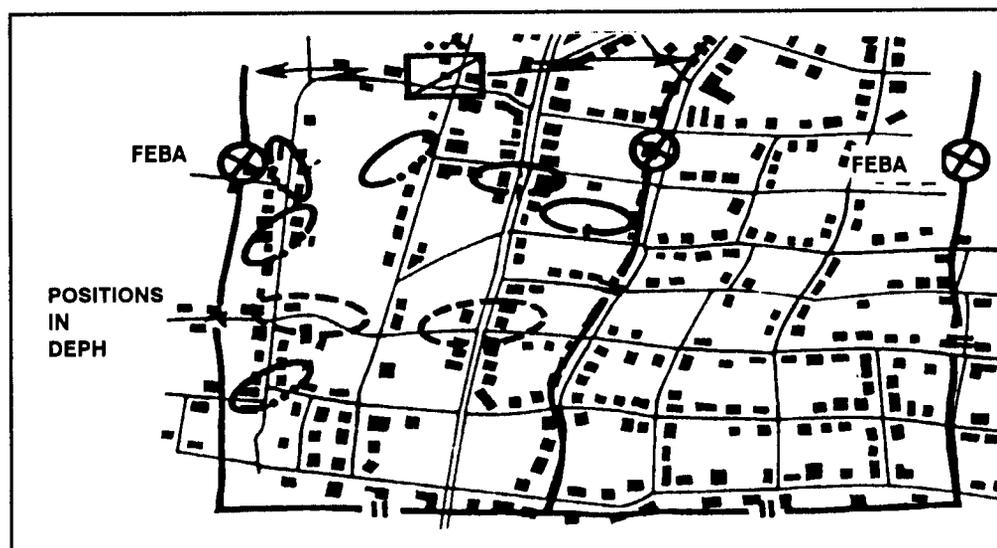


Figure 4-8. Main battle area.

(1) The size and location of battle positions within the battalion's area of operations depends mainly on the type of enemy encountered and the ability to move between positions to block threatened areas. It may be desirable to place small antiarmor elements, secured by infantry, on the forward edges while the main defense is deployed in depth.

(2) A force assigned battle positions on the forward edge of a city or town should—

- Provide early warning of the enemy's advance.
- Engage the enemy at long range.
- Deceive the enemy as to the true location of the defense.

(3) When enemy forces enter and maneuver to seize initial objectives, the defender should employ all available fires to destroy and suppress the direct-fire weapons that support the ground attack. Tanks and BMPs should be engaged as soon as they come within the effective range of antiarmor weapons.

(4) As the enemy attack develops, the actions of small-unit leaders assume increased importance. Squad and platoon leaders are often responsible for fighting independent battles. Thus, it is important that all leaders understand their commander's concept of the defense.

c. **Rear Area.** The rear area is behind the MBA. It is the area from which supply and maintenance support is sent forward. At battalion level, the rear area facilities are in the MBA. They are not organized as combat elements but are critical to the overall defense. Protection of these elements is vital.

4-17. COUNTERATTACK

Small infantry-heavy reserves supported by BFVs and or tanks (if present) should be prepared to counterattack to regain key positions, to block enemy penetrations, to provide flank protection, and to assist by fire the disengagement and withdrawal of endangered positions. When the reserves are committed to counterattack to reinforce a unit, they may be attached to the unit in whose sector the counterattack is taking place. Otherwise, the counterattack becomes the main effort. This makes coordination easier, especially if the counterattack goes through the unit's positions.

4-18. DEFENSE DURING LIMITED VISIBILITY

The TF and TM commander can expect the attacker to use limited visibility conditions to conduct necessary operations to sustain or gain daylight momentum. (See Appendix I for more information.)

a. Commanders should employ the following measures to defend against night attacks.

(1) Defensive positions and crew-served weapons should be shifted just before dark to deceive the enemy as to their exact location. (A squad or fire team can often be shifted to an adjacent building and cover the same avenue of approach.)

(2) Unoccupied areas between units, which can be covered by observed fire during daylight, may have to be occupied or patrolled at night.

(3) Radar, remote sensors, and night observation devices should be emplaced on streets and open areas.

(4) Nuisance mines, noise-making devices, tanglefoot tactical wire, and OPs should be positioned on secondary avenues of approach for early warning.

(5) Observation posts, planned indirect fires, patrols, and anti-intrusion devices should be used to prevent infiltration.

(6) Artificial illumination should be planned, to include the use of street lamps, stadium lights, and so forth.

(7) Indirect fire weapons, grenade launchers, and hand grenades should be used when defenses are probed to avoid disclosure of defensive positions.

b. When the enemy begins his night assault, FPFs should be initiated by a planned signal. Crew-served weapons, tank-mounted weapons, and individual riflemen fire within their assigned sectors. Grenades and command detonated mines should be used to supplement other fires as the enemy approaches the positions.

c. Defenders should move to daylight positions before the BMNT. During attacks in fog, rain, or snowstorms, many of the techniques described for night defense apply. Commanders must rely on OPs and patrolling in these situations.

Section V. DEFENSIVE PLAN AT BATTALION LEVEL

The built-up area defensive plan at battalion level depends on the size and location of the area. Many factors must be considered before instituting such a plan.

4-19. DEFENSE OF A VILLAGE

A battalion TF assigned a defensive sector that includes a village may incorporate the village as a strongpoint in its defense. This use of a built-up area is most common where the village stands astride a highspeed avenue of approach or where it lies between two difficult obstacles. To incorporate such an area into its defense, the battalion TF must control the high ground on either side of the village to prevent the enemy from firing from those areas into the village.

a. The majority of the TF tanks and BFVs should be employed where the maneuver room is the greatest (on the key terrain to the flanks of the village). This is also where the TF antiarmor vehicles (BFVs and or ITVs) should be employed. As the security force withdraws and companies and or teams assume the fight, BFVs and ITVs can assume support by fire positions in depth.

b. Although the battalion TFs disposition should prevent large enemy forces from threatening the rear and flanks of the village, the danger of small-unit enemy infiltration means that the village must be prepared for all-round defense.

c. Engineers required for team mobility operations should stay with the company or company team in the town to provide continuous engineer support if that company or company team becomes isolated. Engineer support for the rest of the TF should be centrally controlled by the TF commander. Engineer assets may be in DS of the other companies or company teams. The priority of barrier materials, demolitions, and mines should go to the company or company team in the village.

d. The TF commander should use the key terrain on the village's flanks for maneuver to prevent the village's defense from becoming isolated. The strongpoints in the town should provide a firm location where the enemy can be stopped, around which counterattacks can be launched (Figure 4-9).

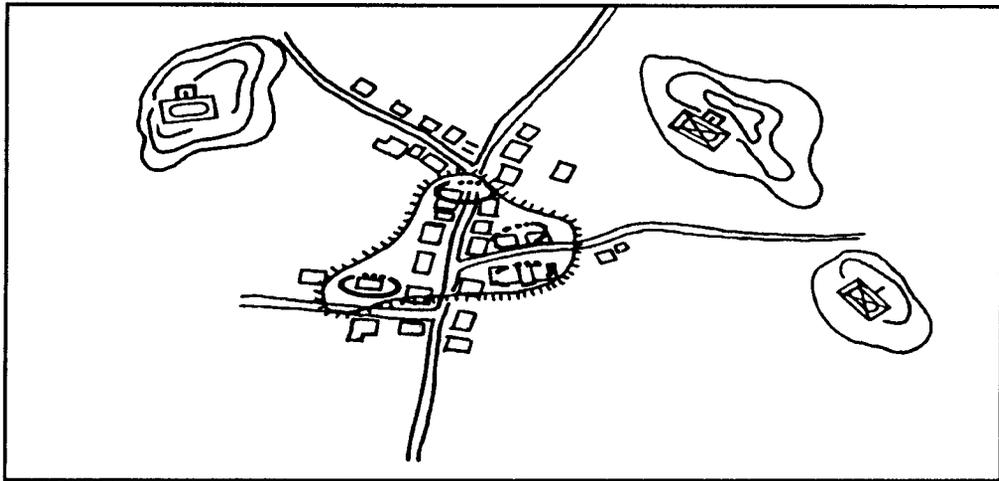


Figure 4-9. Battalion defense of a village.

4-20. DEFENSE IN SECTOR

Along with defending a village, a battalion TF may be given the mission of defending a sector in a city (Figure 4-10). The battalion should take advantage of the outlying structures to provide early warning and to delay the enemy, and of the tougher interior buildings to provide fixed defense. This defense should cover an area about 4 to 12 blocks square.

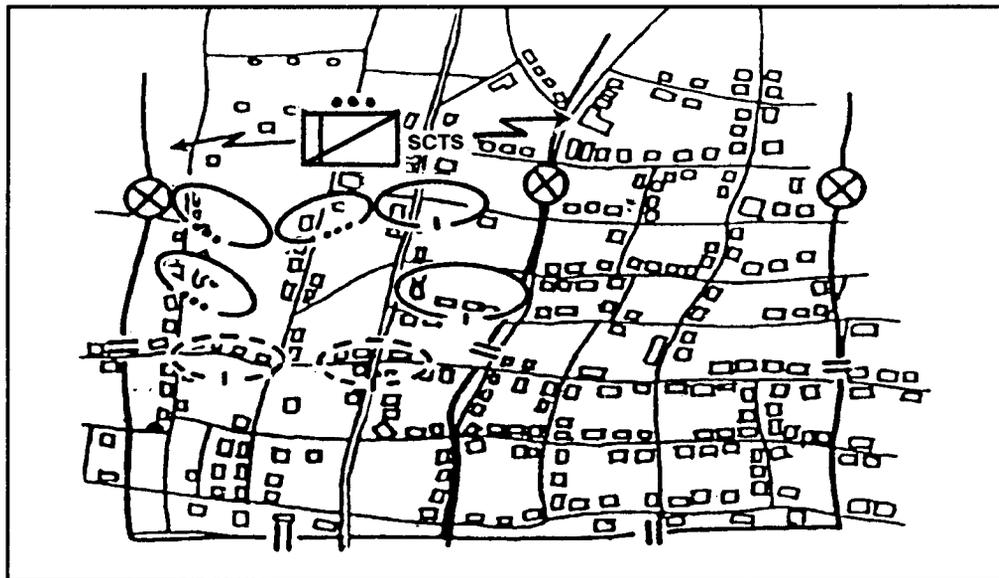


Figure 4-10. Defense of a built-up sector.

a. The battalion TF deployment begins with the reconnaissance platoon reconnoitering the built-up area to provide an area reconnaissance and location of the enemy. At the edge of the area, where fields of fire are the greatest, the battalion TF should deploy BFVs and ITVs and other antiarmor weapon systems to provide long-range antiarmor defense.

b. The FEBA should include the most formidable buildings in the sector. Forward of the FEBA, the battalion TF should organize a guard force, which could be a reinforced company. The guard force should concentrate on causing the enemy to deploy without engaging the enemy in decisive combat. This can be done through maximum use of ambushes and obstacles, and of covered and concealed routes through buildings for disengagement. The guard force inflicts casualties and delays the enemy but avoids decisive engagement since buildings beyond the FEBA do not favor the defense. As the action nears the FEBA, the guard force detects the location of the enemy's main attack. Upon reaching the FEBA, the guard force can be used as a reserve and reinforce other elements of the battalion, or it can counterattack to destroy an enemy strongpoint.

c. The defense along the FEBA consists of a series of positions set up similar to that described in the company defense of the village (see paragraph 4-18). Key terrain features, such as strong buildings, road junctions, and good firing positions, should be the center of the strongpoint defense. Based on METT-T considerations, the defense in sector may consist of either strongpoints or battle positions. Strongpoints located on or covering decisive terrain are extremely effective in the defense. Buildings should be prepared for defense as outlined in Appendix D.

d. BFVs should be used to engage BMPs, BTRs, and BRDMs; to cover obstacles with fire; and to engage in counterattacks with tanks. They can also be used to transport casualties and supplies to and from the fight.

e. The battalion's attached tanks should be used to engage enemy tanks, cover obstacles by fire, and engage in counterattacks. They should be employed in platoons where possible, but in congested areas they may be employed in sections.

f. Artillery and mortar fire should be used to suppress and blind enemy overwatch elements, to engage enemy infantry on the approaches to the door, to provide counterbattery fire, and to support counterattacks using both indirect and direct fire.

g. Engineers should be attached to the delaying force to help in laying mines and constructing obstacles, clearing fields of fire, and preparing routes to the rear. These routes should also have obstacles. Engineers should be in support of the force in the strongpoints to help prepare fighting positions.

4-21. DELAY IN A BUILT-UP AREA

The purpose of a delay is to slow the enemy, cause enemy casualties, and stop the enemy (where possible) without becoming decisively engaged or being outmaneuvered. The delay can either be oriented on the enemy or on specified terrain such as a key building or manufacturing complex.

a. A delay in a built-up area consists of a succession of ambushes and battle positions (Figure 4-11, page 4-22).

(1) Ambushes are planned on overmatching obstacles and are closely coordinated but decentrally executed. The deployment of the battalion TF is realigned at important cross streets. The ambushes can be combined with

limited objective attacks on the enemy's flanks. These are usually effective in the edge of open spaces, parks, wide streets, and so on. These should be executed by tanks and BFVs along with dismounted infantry.

(2) Battle positions should be placed where heavy weapons, such as tanks, BFVs, TOWs, antiarmor weapons, and machine guns, will have the best fields of fire. Such locations are normally found at major street intersections, parks, and at the edge of open residential areas. Battle positions should be carefully and deliberately prepared, reinforced by obstacles and demolished buildings, and supported by artillery and mortars. They should inflict maximum losses on the enemy and cause him to deploy for a deliberate attack.

b. Tanks, BFVs, and antiarmor weapons should have prepared primary and alternate positions to reduce their vulnerability. Coordination must be ongoing with withdrawing ambushes until they are safely within the battle position.

c. The battalion TF is most effective when deployed in two delaying echelons, alternating between conducting ambushes and fighting from battle positions. As the enemy threatens to overrun a battle position, the company disengages and delays back toward the next battle position. As the company passes through the company to the rear, it establishes another battle position. Smoke and demolitions are used to aid in the disengagement. Security elements on the flank can be employed to prevent the enemy from out-flanking the delay. A small reserve can be used to react to unexpected enemy action and to conduct continued attacks on the enemy's flank.

d. The direction of the engineer effort should be centralized to support the preparation of battle positions. It should be decentralized to support the force committed to ambush.

e. The width of the TF zone depends upon the nature of the buildings and obstacles along the street and the time that the enemy must be delayed.

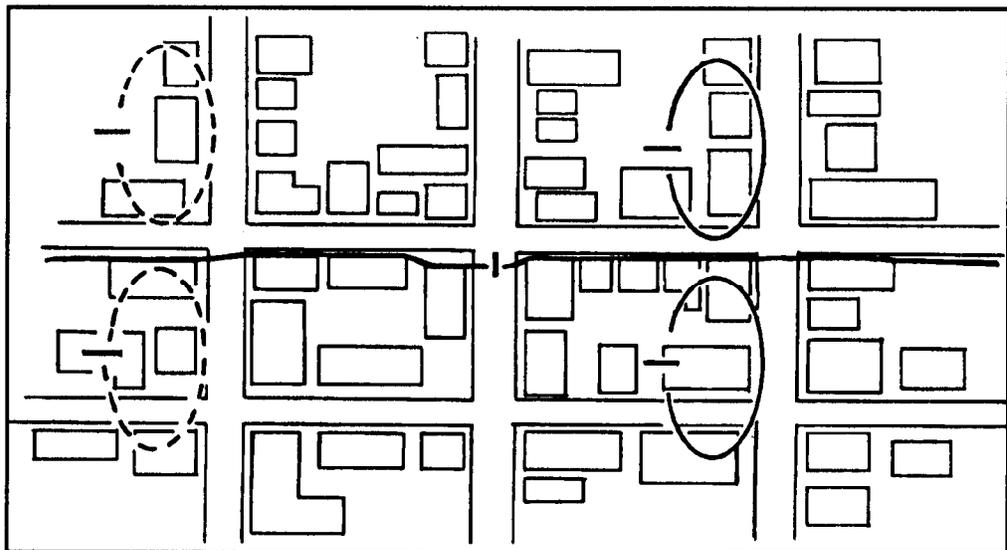


Figure 4-11. Battalion delay in a built-up area.

Section VI. DEFENSIVE PLAN AT COMPANY LEVEL

The defensive plan in built-up areas at company level depends on the size and location of the area. Many factors must be considered before instituting such a plan.

4-22. DEFENSE OF A VILLAGE

Once the company commander has completed his reconnaissance of the village, he scouts the surrounding terrain and, with the information assembled, develops his plan for the defense (Figure 4-12). One of his first decisions is whether to defend with his infantry on the leading edge of the village or farther back within the village.

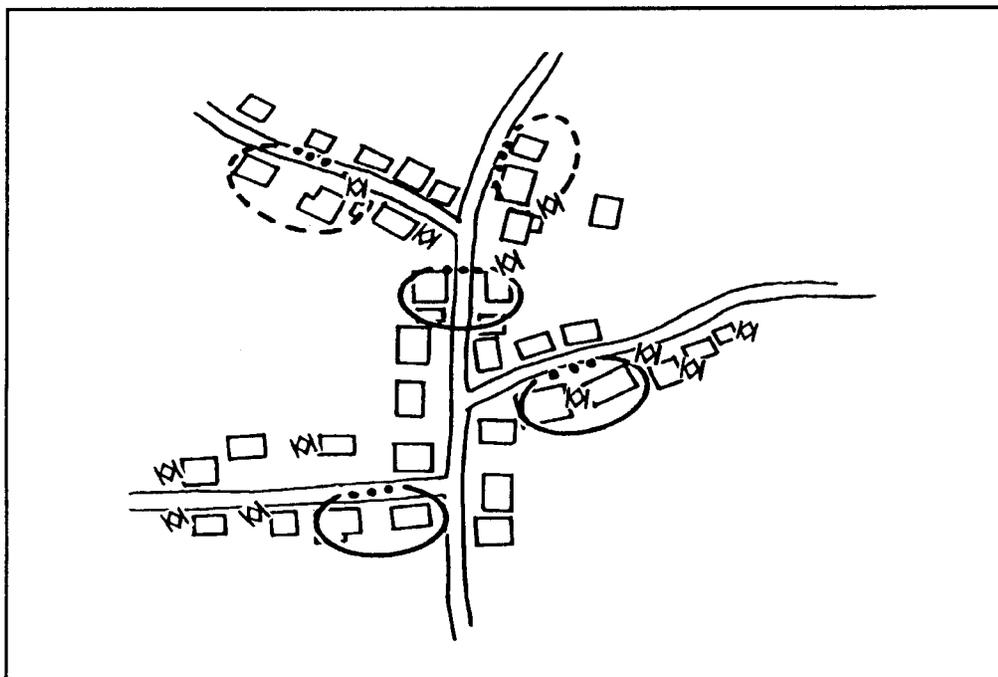


Figure 4-12. Company defense of a village.

a. Several factors influence the commander's decision. First, he must know the type of enemy that his company will defend against. If the threat is mainly dismounted infantry, the greater danger is allowing them to gain a foothold in the town. If the threat is armor or motorized infantry, the greatest danger is that massive direct fire will destroy the company's defensive positions. The company commander must also consider the terrain forward and to the flanks of the village from which the enemy can direct fires against his positions.

b. Platoons are given a small group of buildings in which to prepare their defense, permitting the platoon leader to establish mutually supporting squad-sized positions. This increases the area that the platoon can control and hampers the enemy's ability to isolate or bypass a platoon. A platoon is responsible for the road through the village. The rest of the company is positioned to provide all-round security and defense in depth.

c. A position for the company mortars must be chosen that protects mortars from direct fire and allows for overhead clearance. The company's BFVs or APCs are placed in positions to the rear of the buildings and interior courtyards where their weapon systems can provide added rear and flank security. Combat vehicles are assigned primary, alternate, and supplementary positions as well as primary and secondary sectors of fire. They should be positioned in defilade behind rubble and walls, or inside buildings for movement into and out of the area. Control of the platoon's BFVs or APCs by the platoon leader is required for resupply, MEDEVAC, and rapid repositioning during the battle.

d. The company commander locates a forward area where he can position his company trains. A location is chosen near the highway to ease recovery and maintenance operations. A company OP is established where the fields of observation are best.

e. The company commander must also decide which buildings must be rubbled. To defeat the enemy he must have good fields of fire, but rubbleing the buildings too soon or rubbleing too many may disclose his exact locations and destroy cover from direct fire. The company's TOWs are positioned on high ground in and around the town to attain good fields of fire to the front and flanks.

f. If a tank platoon is available from the TF, the company commander could place the tanks along the leading edge where rapid fire would complement the TOWs and Dragons. The tank platoon leader should select exact firing positions and assign sectors of fire. If faced by enemy infantry, the tanks move to alternate positions with the protection of the infantry. These alternate positions allow the tanks to engage to the front as well as the flanks with as little movement as possible. After they are withdrawn from the leading edge of the town, the tanks could provide a mobile reserve for the team.

g. FPFs are planned to address the biggest threat to the platoon—the enemy's infantry. When firing an FPF inside a built-up area is required, mortars are more effective than artillery. This is due to their higher angle of fall which gives them a greater chance of impacting on the street.

h. Obstacles, mainly antivehicle obstacles, are easily constructed in a built-up area. The company commander must stop enemy vehicles without interfering with his own movement in the village. Therefore, he executes the emplacement of cratering charges at key street locations on order. Mines are laid on the outskirts of the town and along routes the company will not use.

i. The supporting engineers use C4 and other explosives to make firing ports, mouseholes, and demolition obstacles. Based upon his priority of work, the commander tells the engineer squad leader to assist each of the infantry platoons preparing the village for defense and to execute the team's obstacle plan. The squad leader's mission is to tell the infantrymen exactly where to place the demolitions and how much is needed for the desired effect. He also assists in the emplacement and recording of the minefield as well as the preparation of fighting positions.

j. Ammunition expenditure is usually high when fighting in a built-up area. To avoid moving around the village with ammunition resupply during the battle, the commander directs that more ammunition be stockpiled in each occupied platoon and squad position. He also orders the platoons to

stockpile firefighting equipment, drinking water, food, and first-aid supplies at each squad position. Other factors the company commander must consider are:

- Resupply.
- Medical evacuation.
- Communications.
- Firefighting.
- Sleep and alert plans.
- Security.
- Limited visibility.
- Civilian control.

k. To ensure adequate communications, the company installs a wire net and develops a plan for pyrotechnic signals. Backup wire should be laid in case primary lines are cut by vehicles, fires, or the enemy. The commander also plans for the use of messengers throughout the village.

4-23. DEFENSE OF A CITY BLOCK

A company in a built-up area may have to defend a city block in a core periphery or residential area. It conducts this operation according to the defensive scheme of the battalion. The operation should be coordinated with the action of security forces charged with delaying to the front of the company's position. The defense should take advantage of the protection of buildings that dominate the roads.

a. A well-organized company defense—

- Stops the attack of the enemy on the roads by using obstacles and enfilade fire.
- Destroys the enemy by ambush and direct fire from prepared positions.
- Ejects the enemy from footholds or remains in place for a counterattack conducted by battalion.

b. The operation of the company is more effective if it has time to reconnoiter the terrain, and to prepare obstacles and fire lanes. Vehicles not needed for the defense should be grouped in the combat trains at battalion. The OPs should be supplemented by patrols, mainly at night, and communications should be wire. The company should be organized to provide a series of OPs, a defense, and a reserve that is tasked with counterattacks.

c. The defensive forces should ambush on the avenues of approach, cover the obstacles by fire, and prepare a strong defense inside the buildings (Appendix D). The reserve can be tasked—

- To reinforce the fires of the defense.
- To react to a danger on the flank.
- To counterattack to throw the enemy from a foothold.

d. Engineers should be controlled at company level. They construct obstacles, prepare access routes, and assist in preparing defensive positions.

A company or section of tanks attached to the company should provide heavy direct-fire support, engage enemy tanks, and support counterattack.

4-24. COMPANY DELAY

A company delay can be part of a battalion's defense (Figure 4-13). Its operations destroy enemy reconnaissance elements forward of the outskirts of the town, prevent their penetration of the built-up areas, and gain and maintain contact with the enemy to determine the strength and location of the main attack.

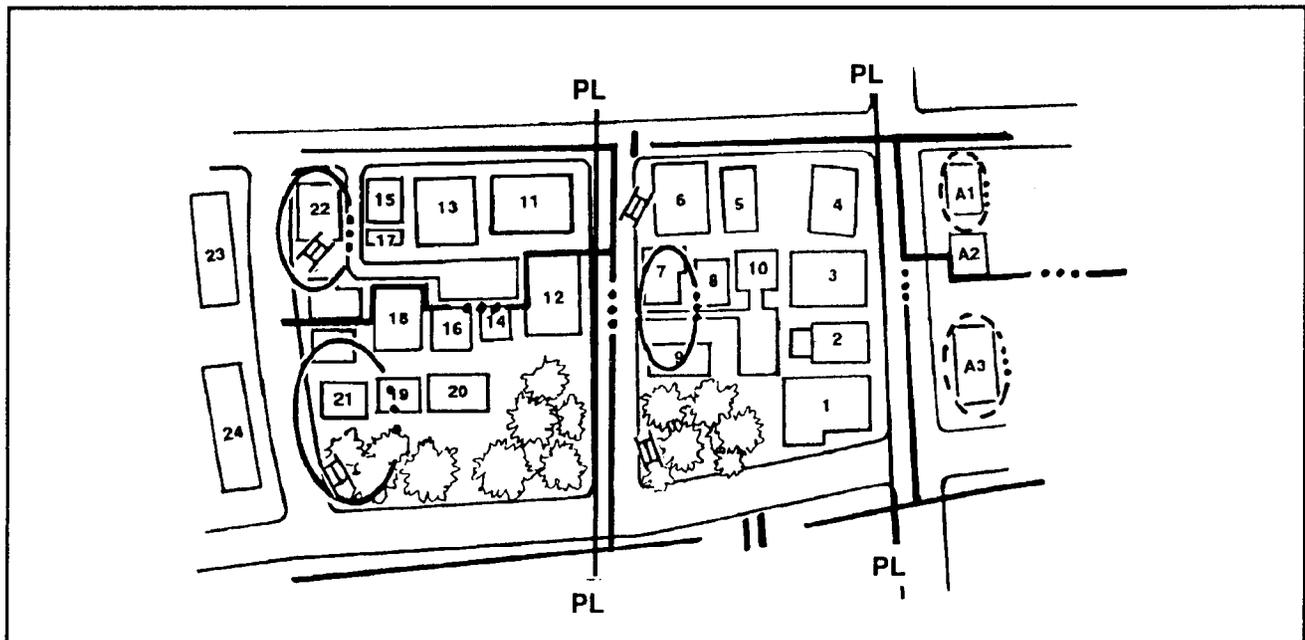


Figure 4-13. Company delay in a built-up area.

a. The company's sector should be prepared with obstacles to increase the effect of the delay. Engineers prepare obstacles on main routes but avoid some covered and concealed routes that are known by the friendly troops for reinforcement, displacement, and resupply. These routes are destroyed when no longer needed.

b. Antiarmor weapon systems are positioned on the outskirts of the town to destroy the enemy at maximum range. They should be located in defilade positions or in prepared shelters. They fire at visible targets and then fall back or proceed to alternate positions. Platoons should be assigned sectors from 500 to 700 meters (one to two blocks) wide. They should be reinforced with sensors or GSRs, which can be emplaced on the outskirts or on higher ground. Platoons delay by using patrols, OPs, and ambushes and by taking advantage of all obstacles. Each action is followed by a disengagement and withdrawal. By day, the defense is dispersed; at night, it is more concentrated. Close coordination is vital.

c. Tanks support the platoon by engaging enemy tanks, providing reinforcing fires, aiding the disengagement of the platoons, and covering obstacles by fire.

d. BFVs support the platoon in the same manner as tanks except they engage BTRs, BMPs, and BRDMs.

4-25. DEFENSE OF A TRAFFIC CIRCLE

A rifle company or company team may be assigned the mission of defending a key traffic circle in a built-up area to prevent the enemy from seizing it (Figure 4-14).

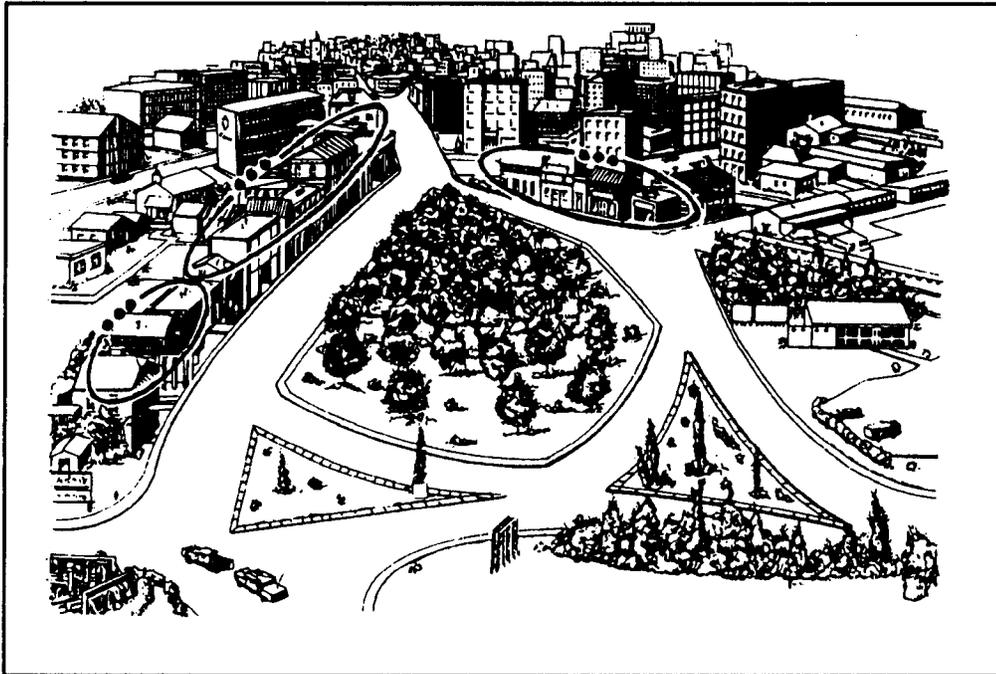


Figure 4-14. Defense of a traffic circle.

a. The company commander with this mission should analyze enemy avenues of approach and buildings that dominate those avenues. He should plan all possible fire power on the traffic circle itself and on the approaches to it. He should also plan for all-round defense of the buildings that dominate the traffic circle to prevent encirclement. The commander should prepare as many covered and concealed routes between these buildings as possible. This makes it easier to mass or shift fires, and to execute counterattacks.

b. Obstacles can also deny the enemy the use of the traffic circle. Obstacle planning in this case must consider if friendly forces are supposed to use the traffic circle. TOWs and Dragons can fire across the traffic circle if fields of fire are long enough. Tanks should engage enemy tanks and provide heavy direct-fire support for counterattacks. BFVs should engage BTRs, BMPs, and BRDMs and provide direct fire to protect obstacles.

Section VII. DEFENSIVE PLAN AT PLATOON LEVEL

The defensive plan in built-up areas at platoon level is METT-T and ROE dependent.

4-26. DEFENSE OF A STRONGPOINT

One of the most common defensive tasks a platoon will be given is the strongpoint defense of a building, part of a building, or a group of small buildings (Figure 4-15). The platoon's defense is normally integrated into the company's mission (defense of a traffic circle, and so forth). The platoon must keep the enemy from gaining a foothold in buildings. It makes the best use of its weapons and supporting fires, organizes all-round defense, and counterattacks or calls for a company counterattack to eject an enemy that has a foothold. The platoon leader analyzes his defensive sector to recommend to the company commander the best use of obstacles and supporting fires.

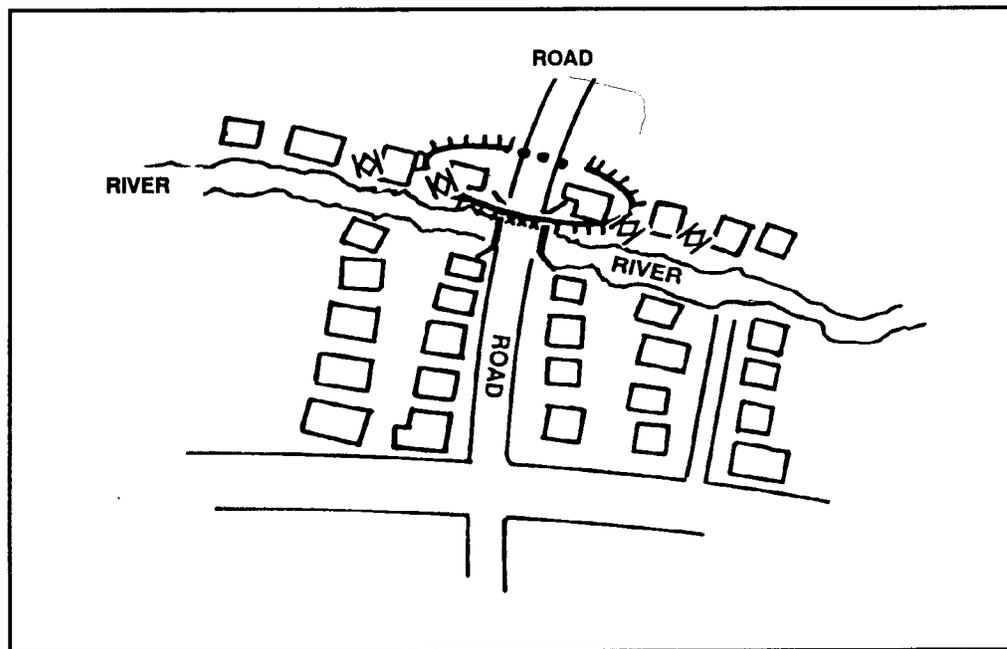


Figure 4-15. Defense of a strongpoint.

a. The platoon should be organized into a series of firing positions located to cover avenues of approach, to cover obstacles, and to provide mutual support. Snipers may be located on the upper floors of the buildings. Unengaged elements should be ready to counterattack, fight fires, or reinforce other elements of the platoon.

b. Depending on the length of the mission, the platoon should stockpile the following:

- Pioneer equipment (axes, shovels, hammers, picket pounders).
- Barrier material (barbed wire, sandbags).
- Munitions (especially grenades).
- Food and water.
- Medical supplies.
- Firefighting equipment.

4-27. DEFENSE AGAINST ARMOR

The terrain common to built-up areas is well-suited to an infantry's defense against mechanized infantry and armored forces. Mechanized infantry and armored forces try to avoid built-up areas but may be forced to pass through them. A well-trained infantry can inflict heavy casualties on such forces.

a. Built-up areas have certain traits that favor infantry antiarmor operations.

(1) Rubble in the streets can be used to block enemy vehicles, conceal mines, and cover and conceal defending infantry.

(2) The streets restrict armor maneuver, fields of fire, and communications, thereby reducing the enemy's ability to reinforce.

(3) Buildings provide cover and concealment for defending infantry.

(4) Rooftops, alleys, and upper floors provide good firing positions.

(5) Sewers, storm drains, and subways provide underground routes for infantry forces.

b. Antiarmor operations in built-up areas involve the following planning steps:

STEP 1: Choose a good engagement area. Enemy tanks should be engaged where most restricted in their ability to support each other. The best way for infantrymen to engage tanks is one at a time, so that they can destroy one tank without being open to the fires of another. Typical locations include narrow streets, turns in the road, "T" intersections, bridges, tunnels, split-level roads, and rubble areas. Less obvious locations can also be used by using demolitions or mines to create obstacles.

STEP 2: Select good weapons positions. The best weapons positions are places where the tank is weakest and the infantry is most protected. A tank's ability to see and fire are limited, mainly to the rear and flanks, if the tanks are buttoned up. Figure 4-16 shows the weapons and visual dead space of a buttoned-up tank against targets located at ground level. Similar dead space exists against targets located overhead.

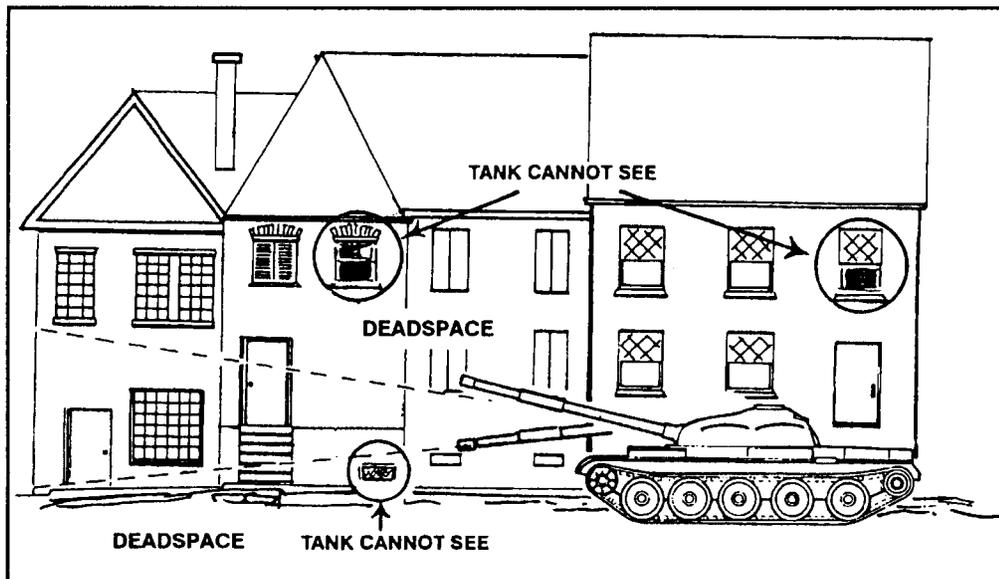


Figure 4-16. Tanks cannot fire at close-range, street-level, and overhead targets.

STEP 3: Assign target reference points and select method of engagement. After selecting the weapons positions, assign target reference points (TRPs) to ensure coverage of the areas and as a tool in controlling fires. The TRPs should be clearly visible through the gunner's sights and should be resistant to battle damage (for example, large buildings or bridge abutments, but not trees or cars). The leader of the antiarmor operation should specify what type of engagement should be used, such as frontal, cross-fire, or depth. Frontal fire is the least preferred since it exposes the gunner to the greatest probability of detection and it is where the armor is the thickest. (For more information on target engagement techniques, see FM 7-91 and or FM 23-1.)

(a) To the infantry force, the best places to fire on tanks are at the flanks and rear at ground level or at the top of tanks if the force is in an elevated position in a building (see Appendix H for minimum arming distance). A suitable antiarmor defense might be set up as shown in Figure 4-17.

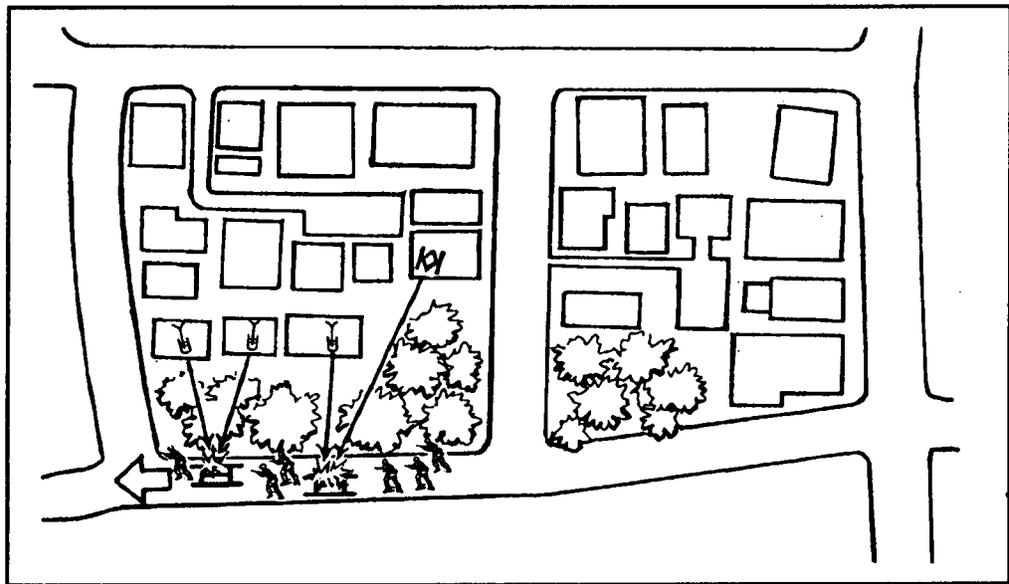


Figure 4-17. A platoon's antiarmor defense.

(b) The best place to engage a tank from a flank is over the second road wheel at close range. This can be done using a corner so that the tank cannot traverse the turret to counterattack.

(c) For a safe engagement from an elevated position, infantrymen should allow the tank to approach to a range three times the elevation of the weapons.

(d) To engage at a longer range is to risk counterfire, since the weapon's position will not be in the tank's overhead dead space. However, overhead fire at the rear or flank of the tank is even more effective. Alternate and supplementary positions should be selected to enforce all-round security and to increase flexibility.

STEP 4: Coordinate target engagement. Tanks are most vulnerable when buttoned up. The first task of the tank-killing force is to force the tanks to button up, using all available direct and indirect fire. The proper use of fire control measures and graphics will greatly diminish the probability of

fratricide. The next task is to coordinate the fires of the antitank weapons so that if there is more than one target in the engagement area, all targets are engaged at the same time.

c. Armored vehicles are often accompanied by infantry in built-up areas. Antiarmor weapons must be supported by an effective all-round antipersonnel defense (Figure 4-18).

d. At a planned signal (for example, the detonation of a mine) all targets are engaged at the same time. If targets cannot, they are engaged in the order of the most dangerous first. Although tanks present the greatest threat, BMPs are also dangerous because their infantry can dismount and destroy friendly antiarmor positions. If the friendly force is not secured by several infantrymen, priority of engagement might be given to enemy APCs. Rubble and mines should be used to reduce target mobility to present more targets to engage.

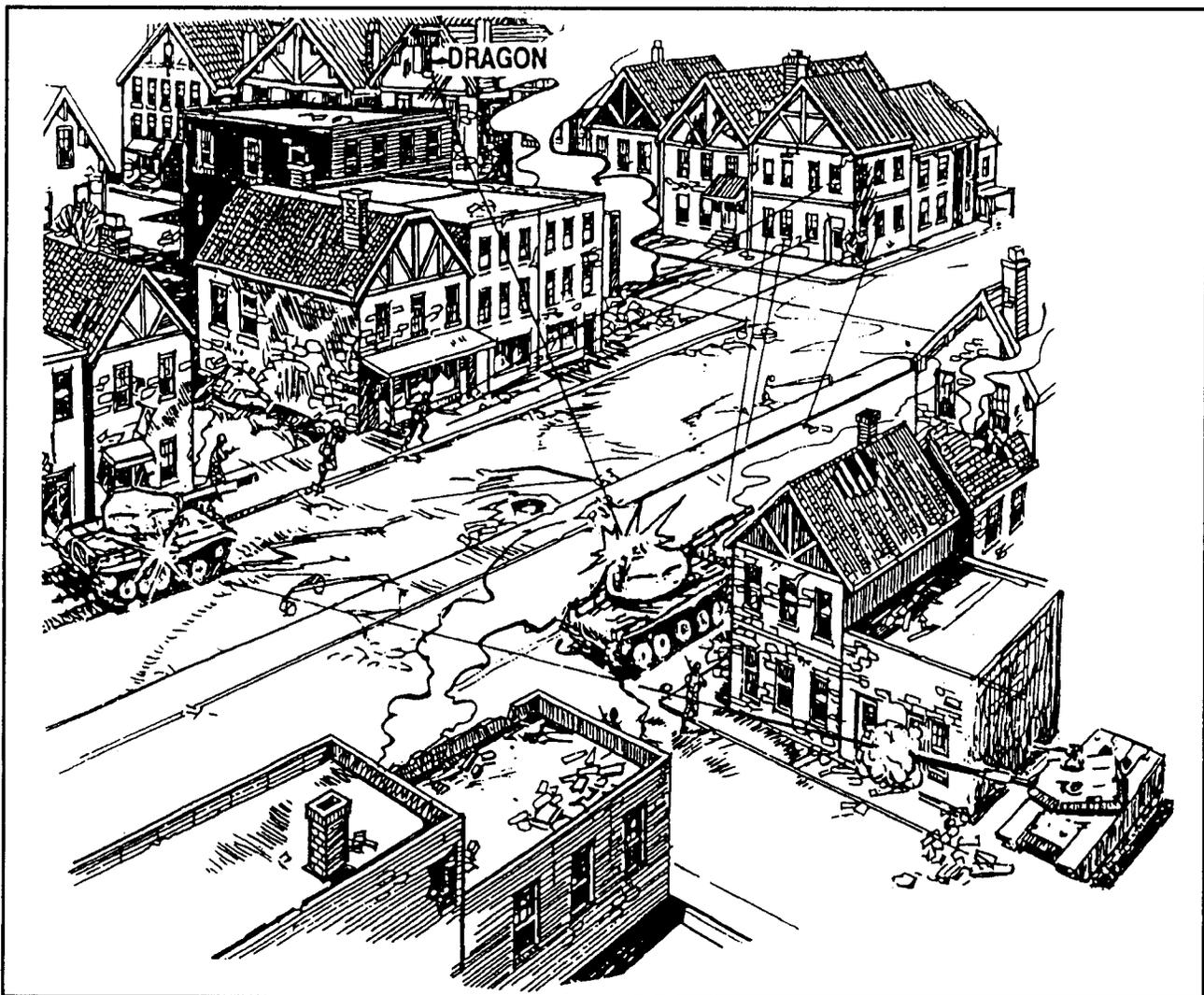


Figure 4-18. Coordinated antiarmor ambush.

4-28. CONDUCT OF ARMORED AMBUSH

A rifle company can use an attached tank platoon to conduct an armored ambush in a built-up area (Figure 4-19). To do so, the tank platoon should be reinforced with a BFV or APC and one or two squads from the rifle company. The ambush can be effective against enemy armor if it is conducted in an area cleared and reconnoitered by friendly forces.

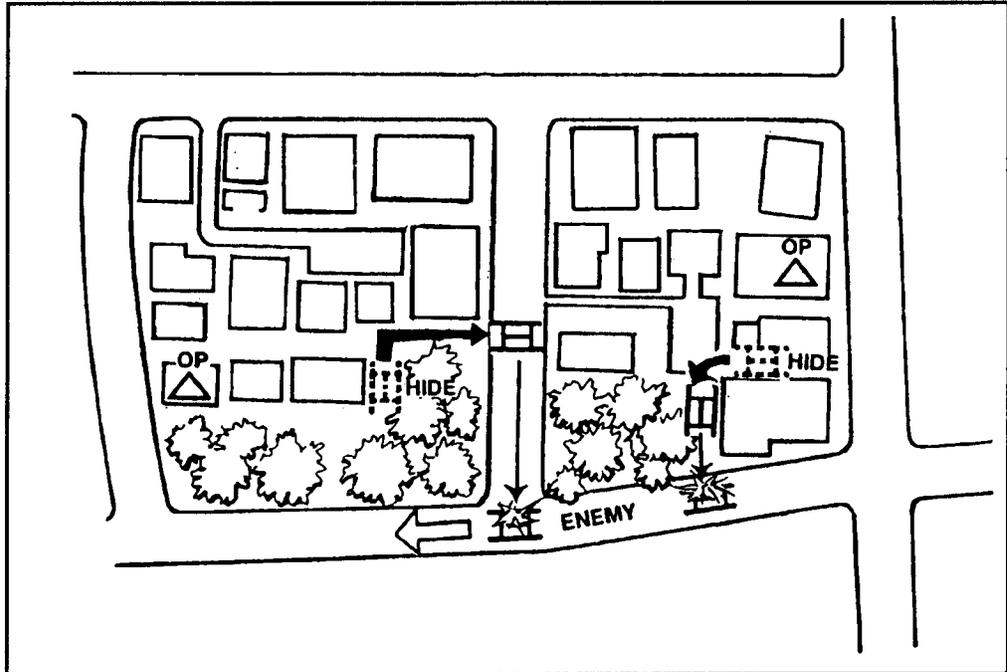


Figure 4-19. Armored ambush.

a. The operation involves maneuver on a road network that is free of obstacles. Obstacles outside the ambush area can be used to canalize and delay the enemy. The ambushing tank platoon must know the area.

b. The ambushing tanks should be located in a hide position situated about 1,000 meters from the expected enemy avenue of approach. A security post, located at a choke point, observes and reports the approach, speed, security posture, and activity of the enemy. This role is assigned to a scout who uses the BFV, ITV, or APC to move from OP to OP. When the enemy is reported at a trigger point or TRP, the tank platoon leader knows how much he must move his tanks to execute the ambush.

c. The tanks move quickly from their hide positions to firing positions, taking advantage of all available concealment. They try for flank shots on the approaching enemy—the average range is 300 to 400 meters. Such long ranges do not expose tanks to the enemy infantry. Once the enemy is engaged, tanks break contact and move to a rally point with close security provided by an infantry squad. They then move to a new ambush site.