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Military Operations on Urbanized Terrain (MOUT)

Table of Contents

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CHAPTER 1

Introduction

Tactical doctrine stresses that urban combat operations are conducted only when required and that built-up areas are isolated and bypassed rather than risking a costly, time-consuming operation in this difficult environment. Adherence to these precepts, though valid, is becoming increasingly difficult as urban sprawl changes the face of the battlefield. The acronym MOUT (Military Operations on Urbanized Terrain) classifies those military actions planned and conducted on a terrain complex where manmade construction impacts on the tactical options available to commanders. Commanders must treat the elements of urban sprawl as terrain and know how this terrain affects the capabilities of their units and weapons. They must understand the advantages and disadvantages urbanization offers and its effects on tactical operations.

Urban combat operations may be conducted in order to capitalize on the strategic or tactical advantages which possession or control of a particular urban area gives or to deny these advantages to the enemy. Major urban areas represent the power and wealth of a particular country in the form of industrial bases, transportation complexes, economic institutions, and political and cultural centers. The denial or capture of these centers may yield decisive psychological advantages that frequently determine the success or failure of the larger conflict. Villages and small towns will often be caught up in the battle because of their proximity to major avenues of approach or because they are astride lines of communications that are vital to sustaining ground combat operations.

During offensive operations, commanders must seek to achieve a favorable mobility differential over the defender, to retain momentum, and to avoid a protracted and costly urban battle. Built-up areas are obstacles to maneuver; hence, isolation and bypass, which neutralize their value to the defender, are the goals of urban offensive operations.

Conversely, the defender must seek to integrate the elements of urban sprawl into his defensive scheme to slow, block, or canalize the attacker and enhance weapon effectiveness.

The attack or defense of a built-up area should be undertaken only when significant tactical or strategic advantage accrues through its seizure or control.

Urbanization is a complex, multifaceted process influenced by many factors including a nation's cultural development, its economic resources, and its industrial capacity. Although its form varies from region to region, urbanization is characterized by a general pattern of changes in land usage and the spread of manmade features across natural terrain.

Tactical terrain analysis has traditionally considered some elements of the urban environment such as the allocation of land to agriculture or forestry and the distribution of railway or road networks. However, the focus has been on natural terrain elements. In Europe and other urbanized areas of the world, increased

awareness of the effects of manmade features on the overall tactical scheme is necessary. How urban terrain elements impact on operations is an important consideration in determining our tactical options.

For the small-unit tactical commander, the physical layout of a buildup area and structural characteristics of its buildings are critical planning considerations. Appendix A provides a detailed discussion of these factors and the combat characteristics of various types of built-up areas for offensive and defensive operations. For commanders at battalion level and above, the size of a built-up area, the support network of lines of communication, and the urban pattern formed by a complex of built-up areas assume added importance.

BUILT-UP AREAS

The following discussion uses the central European setting to describe these aspects of urbanization. With minor modifications, it is applicable to other urban areas throughout the world.

A built-up area is a concentration of structures, facilities, and population which form the economic and cultural focus for the surrounding area. There are four categories:

Large Cities
(Population Greater than 100,000.)

Most typical of the urbanization process is the increasing number of large and still-growing large cities. In Europe, other than the Union of Soviet Socialist Republics (USSR), there are approximately 375 cities with populations in excess of 100,000. The Federal Republic of Germany (FRG) has 49 cities with populations exceeding 100,000 and 4 cities of over 1 million. Large cities frequently form the core of a larger, densely populated urban complex consisting of the city, its suburban areas, and small towns. Such complexes have the appearance of a single, large, and continuous city containing millions of people and occupying vast areas of land. The illustration on the following page depicts major complexes that exist in FRG. The Rhine-Ruhr complex stretches west to Aachen and south to Bonn and contains over 12.5 million people concentrated in 13,000 square kilometers. The Rhine-Main complex includes Frankfurt Darmstadt, Mainz, Mannheim, and Karlsruhe; it contains over 5 million people in 7,000 square kilometers. To the southeast, greater Stuttgart (2 million people in 3,000 square kilometers) will soon merge with Rhine-Main. These urban centers encompass 10 percent of FRG's total land area and approximately one-half of its total population.

Towns and Small Cities
(3,000 - 100,000.)

Within the FRG there are approximately 235 small cities/towns with populations from 3,000 - 100,000. In many cases these areas are located along major lines of communications and situated in river valleys. Similar to larger cities, these areas are continuing to expand and will eventually form new conurbations or merge with existing ones.

Villages.
(Less than 3,000.)
In the FRG there are approximately 21,000 built-up areas with populations of less than 3,000. In most cases these villages are agriculturally oriented and are usually distributed among the more open cultivated areas of Germany. In the average brigade sector in the FRG there are 25 of these villages. The average

distance between them is only 3.5 kilometers.

Strip Areas

These built-up areas generally form connecting links between villages and towns. They are also found along lines of communications leading to larger complexes. Although the size and population of strip areas vary, they normally assume a long thin linear pattern.

Figure 1-3. Major Urban Complexes.

BUILDING AND STREET PATTERNS

The physical layout of built-up areas is of tactical significance. Five basic building and street patterns which impact on fire support and maneuver schemes recur throughout western Europe. Appendix A provides a detailed analysis of the tactical implications of each pattern. For ease of reference, they have been identified by form and assigned a letter designation. The following table briefly summarizes the general characteristics of each pattern.

TYPE	GENERAL CHARACTERISTICS
A. Dense, Random Construction	Typical old inner city construction with narrow winding streets radiating in an irregular manner from a central area. Found within cities, towns, and villages. Buildings are located close together and frequently along the edge of roadways.
B. Closed-orderly Block	Common to central areas of towns and cities. Wider streets forming generally rectangular patterns with buildings frequently forming a continuous front along a block. Inner block courtyards are common.
C. Dispersed Residential Area	Normally contiguous to Type B areas. Consists of rowhouses or single dwellings with yards, gardens, trees, and fences. Street pattern is normally rectangular or curving.

D. High-rise Area Typical of modern construction in larger towns or cities. Consists of multi apartments, separated large open areas and one-story buildings. Wide streets are laid out in rectangular patterns.

E. Industrial/Transportation Older complexes may be found within Type A and B areas. New construct -normally consists of low, flat-roofed factory and warehouse buildings. Generally located on or along the major rail and highway routes of the urban complex.

LINES OF COMMUNICATION (LOC)

A vast network of modern highways, all-weather roads, railroads, and canals connect the FRG's built-up areas. These LOCs permit rapid access to virtually all areas in western Europe. Areas formerly considered to be terrain-restrictive for movement can now be rapidly traversed. Modern four-lane highways, capable of accommodating thousands of heavy vehicles, crisscross NATO-Europe. Frequently, these highways bypass the larger cities, or at least avoid the congested centers of most built-up areas. There is a limitation, however, inherent in these lines of communication. They are often built across terrain that is relatively impracticable for vehicular traffic movement, and are heavily dependent on a system of bridges, ramps, and overpasses. If these systems can be destroyed, the LOCs may then become virtually useless and an obstacle in themselves.

URBAN PATTERNS

The combination of built-up areas, lines of communication, and natural terrain results in the formation of basic urban patterns that impact on tactical operations.

Hub Phenomenon

Central to any urban pattern is the hub or built-up area. Although it may vary in size from village to major urban complex, the effects of a hub remain constant. For the defender, the hub may serve as the pivot or anchor of his defense or as an element of a defense in depth. As shown, the hub is an obstacle which blocks the attacker's advance. Where adjacent natural terrain permits, a hub will normally be bypassed.

Figure 1-6. Hub Phenomenon.

This requires a change in direction of advance and may reduce offensive momentum and cohesion. As the attacker slides off the leading edge of the hub and begins his bypass operation, his vulnerability to flank attacks and ambushes along the new axis of advance increases.

Where adjacent natural terrain is unsuitable for mounted operations, the hub may be developed as a defensive strongpoint. The decision to attack will require significant forces and could result in time consuming, intensive close combat in the built-up area.

Satellite Pattern

This is a common pattern with its central hub and relatively dependent, dispersed, smaller built-up areas. It is typical of the village-town-small city pattern found within a brigade or perhaps division sector. Lines of communication tend to focus on the central hub, with most taking the form of farm and forest or secondary roads. Seldom will more than one major communications route pass through the central hub of the satellite pattern. The natural terrain and cultivated portions throughout the area are relatively homogeneous. Operations on urbanized terrain find built-in mutual support in this pattern. Outlying or satellite urban centers support the principal urban area at the hub by providing:

- Resupply and evacuation routes for the defender.
- Reinforcement routes for the defender; avenues of approach for the attacker.
- Mutually supporting battle positions for the defender.
- Multiple exit links from the hub for the attacker.

Figure 1-7. Satellite Pattern.

Network Pattern

Similar in initial appearance to the satellite pattern, the network is vastly more complex and diverse. It represents the interlocking of the primary hubs of subordinate satellite patterns and most often occurs at division or higher levels. Formed primarily of towns and cities, its elements are more self-sufficient and less supportive of each other, although a dominant hub may exist. Major lines of communication within a network are more extensive than in a satellite pattern and take a rectangular rather than convergent form. The natural terrain within a network may be more varied than that contained in a single satellite array.

The tactical effects on offensive operations are: to cause delay, in that attacking units must fight their way through a maze of manmade features that provide defensive obstacles; and, to make bypass difficult because natural contiguous terrain frequently is impracticable for mounted operations (e.g., steep slopes, rivers, and heavily forested areas). This pattern provides depth to the defense.

Figure 1-8. Network Pattern

Linear Pattern

A subelement of the basic geometric patterns, the linear array may form one ray of the satellite pattern or be found along connecting links between the hubs of a network. Most frequently, the linear array results from the stringing of minor hubs along a confined natural terrain corridor such as an-elongated valley approach. It may also occur along the banks of a water course or manmade communications route. To the defender, this pattern facilitates the development of a series of strong defensive positions in depth. To the attacker, it presents a series of decision points, delaying his canalized forces and requiring repetitive deliberate attacks. This pattern is frequently found within a battalion zone of responsibility, although it may extend in width and depth throughout a brigade area.

Segment or Pie Slice Pattern

This pattern may occur as a subset of either the satellite of network patterns or within a major hub. It is characterized by the splitting of an urban area by dominant natural terrain such as a river or by manmade features such as roads, railways, and canals. When such a division of other patterns occurs, it may influence the assignment of boundaries and other control measures or attack objectives. It may also bear directly on the organization of the terrain and task organizations. This pattern may be detected on urban terrain at any level of command.

PATTERN EFFECTS

In addition to the basic blocking action which may be caused by the hub phenomenon, other effects can be associated with these patterns.

The Funnel-Fan Effect

This effect normally occurs at battalion or brigade level when a hub is located between terrain features that are unsuitable for mounted operations. Passage of units into the area results in the concentration of forces, a loss of momentum, and canalization. Beyond the hub, forces are required to spread or fan out before full combat power can again be developed. In each case this effect favors defense and hinders offense. It causes an accordion action in units moving through the hub, with increased difficulties in command and control and reduced operating effectiveness. A similar effect on maneuver takes place when the attacker must penetrate an urban network on a narrow front between hubs.

The Funnel Effect

Funnelling or concentration and canalization of forces may occur without the immediate fanning. Again, this effect most frequently occurs at battalion or brigade level when a linear pattern is encountered. It favors the defender by limiting the number of maneuver elements that may be applied against a series of hubs that must be confronted in succession. Greater reliance must be placed by the attacker on indirect and long-range weapon systems. At the same time, it reduces maneuver options available to the defender and routes available for his combat service support elements.

Figure 1-9a . Segment or Pie Slice Pattern

Figure 1-9b Funnel-Fan Effects

TACTICAL IMPLICATIONS

Urbanization is gradually changing the face of the battlefield. Traditional avenues of approach are being blocked and narrowed by manmade features. Urban areas are growing along lines of communications and expanding across the adjacent terrain. This trend is resulting in the concentration of built-up areas and road networks along natural corridors bounded by forests, slopes, marshes, and bodies of water.

The following example illustrates an effect of this process on military operations on urbanized terrain:

The Meiningen Corridor is a broad, high-speed approach permitting armor forces some freedom to maneuver. Throughout the corridor, however, there are a number of villages and towns flanked by restrictive terrain. To the defender, this corridor offers an in-depth system of instant battle positions in the succession of villages spaced from 2 to 4 kilometers apart. Mutual support can be achieved throughout this corridor by integrating village battle positions with adjacent natural terrain obstacles and positions.

To an attacker, the corridor's urban features represent a series of manmade obstacles. Advancing forces that attempt to bypass individual villages and towns are susceptible to flank attacks. The attacker may be required to conduct frequent combined arms attacks which greatly reduce offensive momentum and increase battle losses.

CHARACTERISTICS OF URBAN WARFARE

Some general characteristics of military operations on urbanized terrain apply to both offensive and defensive. operations. Although they are discussed in subsequent chapters, they are presented here in capsule form because of their importance to an understanding of urban warfare.

The decision to attack or defend an urban complex can result in massive damage and destruction. Constraints on firepower to insure minimum collateral damage within its built-up areas can be expected. Combat operations may be hampered by the presence of civilians in the battle area. Concern for their safety can seriously restrict the combat options open to the commander. The necessity to provide life support and other essential services to civilians can siphon off a substantial amount of military resources and manpower. A hostile population may also impose a serious security problem. Success may well be measured by how we accomplish our mission while minimizing destruction of buildings and alienation of the population. On the urban battlefield, advantages and disadvantages in the areas of mobility, cover, and observation tend to even out for attacker and defender. Initially, however, the defender has a significant tactical advantage over the attacker because of his knowledge of the terrain.

Unlike deserts, forests, and jungles which confront the commander with a limited variety of fairly uniform, recurring terrain features, the urban battlefield is composed of an ever-changing mix of natural and manmade features. Frequently, commanders of larger forces will have units fighting on open terrain, on terrain within built-up areas, and on a complex where these two distinct terrain forms merge.

Urban sprawl expands the scope of the commander's terrain analysis and influences the organization and positioning of forces, weapons employment, and maneuver. The dominant role of armor and mechanized infantry on open terrain is balanced by the requirement to fight in that portion of the urban environment which favors the employment of infantry supported by other arms. Manmade features dispersed in varying densities provide increased cover and concealment while frequently restricting observation and fields of fire. These features are also obstacles to maneuver and are to be avoided by an attacker and used by the defender.

Urbanized terrain normally offers numerous avenues of approach for mounted maneuver well forward of and leading to urban areas. In the proximity of its built-up areas, however, such routes generally become convergent and restrictive. Bypass may be blocked by urban sprawl and the nature of adjacent natural terrain. Avenues of approach within built-up areas are determined by street patterns, building arrangements, open areas, and underground systems. Mounted forces are restricted to streets, alleys, and open areas between buildings. Dismounted forces maximize available cover by moving through buildings and underground systems, along edges of streets, and over roofs.

Fighting within a built-up area is characterized by a three-dimensional battle. In addition to fighting the enemy at street level, fighting may also be conducted on roofs and in the upper stories of buildings and below street level in sewer systems, subways, and other underground structures. Assets and resources may be required to deny, retain, secure, or monitor each dimension. It cannot be assumed that the enemy is not there.

Weapons employment and target-acquisition ranges are greatly reduced by urban features. On the approaches to urban areas, visibility frequently extends to less than 1200 meters. Within built-up areas, targets will generally be exposed for brief periods, frequently at ranges of less than 100 meters. These limitations induce close, violent combat between opposing forces, placing great reliance on automatic weapons, rocket launchers, handgrenades, and hand-emplaced high explosives.

Urban features also increase the difficulty of maintaining effective communications. Tactical radios, the backbone of command and control networks, will be extremely range-limited within built-up areas.

Operating from, within, or through urban areas isolates and separates units. Frequently, operations are reduced to a series of small-unit battles. Greater dependence is placed on the individual soldier's and small-unit leader's initiative, skill, and fortitude.

In possibly no other form of combat are the pressures of battle more intense. Continuous close combat, high casualties, the fleeting nature of targets, and fires from a frequently unseen enemy produce severe psychological strain and physical fatigue particularly among small-unit leaders and soldiers.

In combination, the general characteristics of urban warfare make it more difficult to apply basic tactical fundamentals and maintain control. Military operations on urbanized terrain require detailed planning that provides for decentralized execution.

SUMMARY

Urbanization impacts on military operations by adding the element of urban sprawl to the existing terrain complex. It does not change basic tactical doctrine, but requires that commanders understand how these elements may affect the capabilities of their units and weapons.

Built-up areas must be treated as terrain factors during the planning for and conduct of all military operations on urbanized terrain. Those providing tactical or strategic advantages to a defender will be integrated into his overall defensive scheme. Regardless of their size or configuration, built-up areas are obstacles to maneuver along the lines of communication or route of advance for at least one portion of an attacking force. Their value as an obstacle should be neutralized by isolation and bypass whenever feasible. Built-up areas should be attacked only when no other alternative is available.

CHAPTER 2

Offense

Man made features on the urbanized battlefield influence offensive operations at each level of command. To the battlefield commander, a single built-up area may be the dominant terrain feature in his assigned zone of responsibility and may limit alternative courses of action and dictate the nature of combat to be waged. To the brigade and higher commanders, the elements of urban sprawl are factors to be evaluated throughout the decision process.

Units operating on urbanized terrain may conduct or participate in a movement to contact, an exploitation or pursuit, and hasty and deliberate attacks. Although urbanization affects all offensive operations, its greatest influence is felt during the attack.

This chapter summarizes Threat force doctrine for the defense of built-up areas, describes US planning considerations for urban offensive operations, and provides examples of how the offensive battle may be conducted.

HOW THE ENEMY DEFENDS

This section describes why and where the enemy defends and examines those aspects of his defense that are different from our own. It covers the organization, planning, and conduct of the defense to include his use of the combined arms in the defense. The enemy recognizes the political and military importance of the urbanization phenomenon. Threat commanders realize the importance of not only defending built-up areas, but also of incorporating them into the overall defensive plan. The enemy always attempts to establish his defense well forward of an urban area in order to engage and defeat the attacker on the approaches to and flanks of the built-up area.

The enemy reverts to the conduct of defense within a built-up area only when:

- Attacking forces break through defenses organized on the approaches and threaten the built-up area proper.
- The built-up area has especially great political, strategic, or economic importance.
- It is necessary to defend a built-up area which is a seaport or other critical communication/transportation complex.

ORGANIZATION OF THE DEFENSE

The categories of built-up areas contained in Threat literature differ slightly from those described in chapter 1 and provide guidelines for the organization of his defense. Smaller towns and villages of rural areas are incorporated into his defense as strongpoints in accordance with standard defensive doctrine. It

is only for those operations conducted in the more populated urban- areas that modified techniques are described. The following figure shows how the Threat classifies built-up areas by population and estimated perimeter.

Classification of Built-Up Areas

POPULATION	SIZE CLASSIFICATION	ESTIMATED PERIMETER
100,000 or more	Large	more than 25 kms
50,000 to 100,000	Average	15 kms to 25 kms
less than 50,000	Small	less than 15 kms

In order to provide commanders sufficient room to maneuver, urban areas are normally included as part of a larger defensive zone. The tactics and weapon systems used are dependent on the characteristics of the central built-up area and the terrain adjacent to it. The key defensive concept is to draw the attacking force into preplanned kill zones and destroy them.

The task of defending an urban area is normally allocated to a motorized rifle division (MRD). The MRD deliberate defense is organized with a security zone and a main defensive belt. Mutua:ly supporting strongpoints are echeloned in depth. Natural and manmade obstacles, as well as the smaller built-up areas are incorporated in the defense to impede the advance of the attacking forces and to canalize them.

The figure on the following page iIlustrates the basic organization of the terrain when the defense of a built-up area is required. The specific frontages and depths of the defending forces are determined iby the complexity of the urban terrain, the enemy, and the forces and fire support available to the defender.

Security Zone

The role of the security zone is not changed on the urban battlefield. Forces are organized to halt or delay the attacker and cause him to deploy early. A motorized rifle division will normally employ its second-echelon motorized rifle regiment (MRR) in this zone which may extend up to 30 km forward of the main defensive belt. The task of deceiving the attacker as to the location of the main defenses is aided by the restrictive nature of the urban terrain and the presence of small built-up areas which may be integrated into the defensive scheme. The battle in the security zone is fought by motorized rifle companies reinforced with AT weapons, artillery, tanks, and engineers.

Main Defensive Belt

This zone, which may extend up to 15 km in depth, is the backbone of the defense. It is normally

organized in two echelons with the built-up area located within the second echelon.

Forces in the first echelon will normally consist of two MRRs deployed across a zone 20 to 30 km wide. Each MRR will deploy security elements forward of this zone to slow and canalize the attack force. The mission of the first echelon is to defeat the attack forward of the built-up area. A strongpoint defense integrating urban features and frequent local counterattacks is employed to destroy or repulse the attacker. The first-echelon MRRs will have designated secondary positions on the flanks of and within the built-up areas.

Figure 2-3. MRD DELIBERATE DEFENSE

Following withdrawal of forces from the security zone, the second echelon MRR will prepare defensive positions within the built-up area for itself and the first-echelon MRRs. The medium tank regiment will be retained under division control and deployed primarily on the flanks of the built-up area. Elements of this regiment will normally be used to reinforce the first-echelon MRR on the main avenue of approach.

If it is necessary to defend within the built-up area, only a small portion of the available force is used to hold its central area. The MRRs of the division establish their defensive positions on the approaches to the built-up area whenever possible. Since it is unlikely that lengthy preparation time for such operations will be available, the initial defense may be organized based on a detailed map study with only limited personal reconnaissance at the lower levels of command. The layout of the built-up area, the type of structures available, the time of the year, and the climate are important considerations in the planning of the defense.

The defensive battle in the main defensive belt is a combined arms battle fought by the motorized rifle battalion.

COMBINED ARMS UN THE DEFENSE OF A BUILT-UP AREA

Motorized Rifle Battalion (MRB)

Enemy doctrine for the defense of built-up areas emphasizes the importance of the combined arms concept. Motorized rifle units provide the basic element of his urban combat force structure.

The enemy MRR is the most effective unit for combat in the built-up area because of its inherent mobility, armor protection, and rapid capability to adapt buildings and other structures for defense or as shelters against the effects of nuclear weapons. It coordinates closely with units from other arms, some of which will attach elements, and others of which will be placed in will be reinforced by other branches depending on the requirements and conditions expected in various parts of the built-up area.

As a rule the MRB defends as part of the larger, regimental-size unit. It may defend on a main or a secondary avenue of approach and/or be in the first or second echelon or in the reserve.

If the attack penetrates, the MRB must inflict maximum losses, stop further forward movement, and create favorable conditions for the second echelon or regimental reserve to counterattack.

A MRB on the main avenue of approach and in the first echelon:

- Receives the main attack of attacking forces.
- Inflicts decisive damage on the assaulting forces to prevent a breakthrough by tanks and infantry.

Figure 2-4. Secondary Avenue of Approach

The MRB in the first echelon covers a narrower front and receives greater reinforcements than one in the second echelon. It will be supported by most of the artillery of the next higher command.

A MRB in the second echelon or on a secondary avenue of approach:

- Prevents flanking/rear maneuvers.
- Holds defended sites and prevents further advances by an attacker that has penetrated the built-up area.
- Conducts counterattacks to restore positions of the battalions in the first echelon.

MRB defenses are generally organized in two echelons to provide greater depth and reserves. Company strongpoints are prepared for perimeter defense and constitute the basis of the battalion defensive position. The reserve is located in a separate strong-point. Ambush locations are established in the gaps between strongpoints. Numerous firing positions for mortars, artillery, and antitank weapons are designated. The rear service area is selected to capitalize on the cover and concealment afforded by the builtup area. Dummy strongpoints are constructed to deceive the attacker. Positions for securing and defending entrances/exits to underground structures and routes of communications are established. Combat security positions are prepared in front of the defensive position of a first-echelon battalion.

The Reserve:

- Reinforces/replaces battalions in the first echelon.
- Covers breaches caused by enemy nuclear weapons.
- Holds sites deep within the defensive positions whose retention is vital to the overall defense.
- Extinguishes or contains fires that endanger friendly forces or limit their operations.
- Conducts rear area security and defeats air-landed forces that are inserted in the rear.

Figure 2-5. Battalion Defensive Area

Within a built-up area, a company may defend with mutually supporting fires several buildings prepared for perimeter defense. Each platoon defends one or two buildings within a company strongpoint or a floor of a large building that is defended by a company.

Strongpoints constitute the basis of each defensive position. They are usually prepared in solidly constructed buildings located at intersections, entrances to public squares and parks, or adjacent to bridges, and with observation and prepared fields of fire appropriate to the weapons available. Fires are coordinated between strongpoints. They offer personnel protection against weapons of mass destruction. Communication trenches are prepared within strong-points. In addition, ambushes are set up in the gaps between positions, and wooden structures or other buildings which hinder fields of fire are razed.

Fire planning for infantry weapons requires a combination of flanking, interlocking, and layered fires of all types. Weapons are emplaced to provide fires on the approaches to a defensive area, on the flanks, and in the battalion rear. Fires are tied in with artificial and natural obstacles to cover open areas completely.

Particular attention is paid to antitank fire planning within the built-up area. The enemy recognizes that there will be limited opportunities to place effective fires on the tanks within the city; therefore, weapon

positions are carefully selected. Ambushes are prepared along main avenues of armor advance.

- Tanks are routinely attached to a MRB for employment in ambushes or to reinforce antitank defenses. They may operate as "roving guns" or be positioned in strongpoints; and, they may be used in ambushes where they are employed primarily against attacking tanks and along expected routes of the main attack.
- Artillery carries out most of its missions by firing by direct lay. Artillery units are regularly attached to maneuver companies and platoons.
- Mortars of all calibers, with their high-angle fires, ease of transportability, and high rate of fire, are considered to be highly effective in built-up areas.
- Chemical defense elements may be attached to the MRB. They perform radiological and chemical reconnaissance in order to detect the effects of NBC weapons employed by the attacker and to determine the degree and limits of contamination.
- Smoke agents are used extensively to conceal the maneuver of men and weapon systems between strongpoints, defensive areas, and separate buildings that do not have concealed or underground routes between them. Also they deny the attacker observation and aimed fires.
- Nuclear weapons may be used against the attacker's nuclear delivery means and concentrations of forces on the approaches to the city, or against troops who attempt to encircle or bypass the built-up area, or against an attacker who has seized part or all of a built-up area if there are not other weapons available to destroy him.
- Engineers attached to the MRB perform standard engineer tasks.

Party-Political Work.

The enemy views this as critical to fulfilling the assigned combat mission, the creation of a successful defense, and the regaining of the initiative. Political indoctrination is achieved by timely explanation to personnel of the mission and procedures for its accomplishment. Indoctrination of soldiers, NCOs, and officers in patriotism, courage, and ten:city in defending the built-up area is basic to the party-political efforts.

All fighting men are told that no one has the right to leave the defended location without a specific order to do so. Party members are distributed throughout the fighting units. There must be an "active member" in every separate group of fighting men. He conducts party-political indoctrination and provides the example in combat. Based on the commander's iuidance and decision, the Deputy Commander for Political Affairs plans the party-political support for the combat missions. The underlying assumptions to this plan are:

- Every defended building must be a fortress inaccessible to the attacker.
- The force which possesses the stronger moral qualities (e.g., coldness, endurance, and resourcefulness) and knows procedures for fighting in a city will win.

BASIC DEFENSIVE CONSIDERATIONS

The enemy's defense of a built-up area is centrally controlled by the commander, preferably from a command observation post from which he can view the area and communicate with his forces. All available means of reconnaissance are used to determine where the attacker will strike and the location of his main effort. Once this is determined, maximum firepower is continually massed on the approaching attacker.