

## TACTICAL EMPLOYMENT OF ANTIARMOR PLATOONS, COMPANIES, AND BATTALIONS

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# PREFACE

The purpose of this manual is to describe the tactical employment of antiarmor platoons, companies, and battalions. It covers the tactical concepts and techniques for integrating the employment of the TOW against Threat armored forces. This includes the fundamentals of TOW employment, the tactics and techniques used in offensive and defensive operations, and the integration of antiarmor units into the combined arms team effort on the AirLand battlefield. This manual is intended to be used in conjunction with the appropriate infantry or mechanized infantry battalion and company level manuals.

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Unless otherwise stated, whenever the masculine gender is used, both men and women are included.

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# CHAPTER 1

## INTRODUCTION

The development and refinement of materiel, technology, and tactics by both North Atlantic Treaty Organization and Warsaw Pact forces continue to change the complexion of the modern battlefield. Threat forces have a greater ability to locate and destroy an enemy force than ever before. Advances in technology continue to create new families of weapons, communications, and surveillance devices. Technology has produced weapons that are more accurate and more lethal at longer ranges. Additionally, developments in automotive research have led to vast improvements in the mobility of maneuver units.

### 1-1. PURPOSE

- a. Future combat will be characterized by highly mobile formations that have tremendous firepower and shock effect. This is most evident in the Warsaw Pact forces where the armies are made up of motorized, mechanized, and armored forces. These forces are designed to overwhelm and overrun enemy forces on the battlefield.
- b. Antiarmor units equipped with the TOW weapon system provide the infantry and mechanized battalion with unprecedented tank-killing power. Its mobility, long range, and capability to engage the enemy during limited visibility enhances the infantry battalion's capability to defeat the Threat.
- c. Antiarmor units are organized under the H-edition and L-edition TOE. (See [Appendix A.](#)) Listed below are the antiarmor units this manual covers.
  - (1) Antiarmor platoon in infantry and mechanized battalions organized under the H-edition TOE.
  - (2) Antiarmor company in infantry and mechanized battalions organized under the L-edition TOE.
  - (3) Antiarmor battalion (separate) in the National Guard. Employment of the separate antiarmor battalion is discussed in [Chapter 5.](#)

### 1 - 2. THE AIRLAND BATTLEFIELD

- a. In any situation where the battle is dominated by armor formations, success will largely depend on the proper use and maintenance of the combined arms team. The backbone of any armor formation is the tank, yet the tank cannot survive on the modern battlefield without a balanced and coordinated effort of infantry, antiarmor systems, artillery, air defense, engineers, and close air support (CAS).
- b. The concepts and fundamentals of AirLand Battle apply to antiarmor units in much the same

manner as they do to maneuver units. Like tanks, antiarmor systems do not operate alone on the battlefield. They operate in conjunction with infantry, armor, and other elements of the combined arms team. Long-range antiarmor fires of antiarmor units make them a key asset in destroying the integrity of the enemy's combined arms team.

- c. The key to employment of a unit's antiarmor assets is mass. When terrain and fields of fire allow, the TOW platoons should be controlled by one person in the battalion. This person is responsible for planning and directing antiarmor fires in concert with the battalion commander's scheme of maneuver. This means that task-organizing the TOW systems out to the line companies will no longer be the norm. By massing his TOW platoons, the commander does not need to employ his tanks as the principal antiarmor platform. Employing antiarmor systems in areas once covered by tanks releases more tanks to cover areas where their speed and shock effect is maximized. Using antiarmor systems in bases of fire frees more tanks to maneuver.
- d. In the offense, antiarmor systems give the maneuver commander a tremendous increase in the capability to overwatch his forces and to conduct an attack. Antiarmor fires also allow the commander to engage and destroy enemy tanks before committing his maneuver forces to the battle.
- e. In the defense, integration of antiarmor fires with engineer countermobility efforts, artillery, and other direct-fire weapons, greatly increases the chances for success against a larger enemy force. The long range of antiarmor units allows the maneuver commander to engage and destroy enemy vehicles early in the battle. As the enemy closes with friendly maneuver units, displacement and repositioning of antiarmor units allows continuous antitank fires throughout the depth of the battlefield.

This also allows antiarmor units to support a counterattack to regain the initiative.

### 1-3. CAPABILITIES AND LIMITATIONS

1. All antiarmor units have common capabilities that must be understood and considered to realize their full combat potential. The TOW 2 weapon system provides direct fires against armor or other hard targets out to 3,750 meters. This extended range enables the TOW to engage armor beyond the enemy's capability to return effective, direct cannon fire. These fires can be delivered with great accuracy in daylight, at night and during other conditions of limited visibility (smoke, haze, and fog). The wheeled or tracked TOW 2 system is fully mobile and can be concealed easily. In the dismounted mode, it can be transported in Army utility helicopters. Antiarmor units equipped with improved TOW vehicles (ITVs) in mechanized battalions have armor protection and mobility equivalent to the mechanized infantry companies.
2. Antiarmor units also have limitations. The ones with the most impact are the austere combat support (CS) and combat service support (CSS) capabilities organic to separate antiarmor battalions and antiarmor companies (see [Chapter 5](#)). Commanders employing wheeled vehicle-mounted antiarmor units must consider their lack of protection against direct and indirect fires. Careful positioning in depth and rapid relocation can improve their survivability. Both tracked and wheeled vehicle-mounted antiarmor elements must be positioned so that accompanying infantry provides them security against ground attack, especially in restricted terrain and during reduced visibility. Though accurate, TOW rate of fire is relatively slow due to tracking and reload time. This, coupled with its launch signature, increases the antiarmor squad's

vulnerability, especially wheeled vehicle-mounted, when it engages within the enemy's direct-fire range. This vulnerability is reduced when antiarmor elements reposition frequently and integrate their fires with the fires of tanks and other antitank weapons, and with indirect fires to complicate the enemy's target acquisition task.

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# CHAPTER 2

## FUNDAMENTALS OF ANTIARMOR UNIT EMPLOYMENT

Using the fundamentals of antiarmor unit employment increases the probability of destroying targets and enhances the survivability of the antiarmor elements. The fundamentals are discussed in the following paragraphs.

### 2-1. PROVIDE MUTUAL SUPPORT

Because of their assigned tasks, their relative positions (with respect to each other and the enemy), and their inherent capabilities, units give mutual support to each other. Mutual support is established by employing the TOW by section and by overlapping sectors of fire between sections.

- Employing by Section. Employment of TOW by section ([Figure 2-1](#)) establishes mutual support between two squads. If one squad is attacked or forced to displace, the other squad can continue to cover the assigned sector. To achieve this, the squads position themselves so that fires directed at one squad do not suppress the other squad.

[Figure 2-1](#). Employment by section.

- b. Overlapping Sectors of Fire. Overlapping sectors of fire ([Figure 2-2](#)) is essential to mutual support. It must be accomplished with primary, alternate, or secondary sectors of fire.

[Figure 2-2](#). Overlapping sectors of fire.

### 2-2. PROVIDE SECURITY

Antiarmor units are vulnerable to attack by dismounted infantry. To protect antiarmor units, position them near friendly infantry units. Antiarmor squads do not need to be in the same place as infantry, but the infantry should be able to cover dismounted avenues of approach to the antiarmor positions. When moving with infantry, antiarmor units provide their own local security.

### 2-3. STRIVE FOR FLANK SHOTS

Antiarmor squads and sections should be positioned to engage tanks from the flank ([Figure 2-3](#)). Frontal shots at enemy armor are less desirable because--

- A tank's armor protection is greatest in the front.
- A tank's firepower and crew are normally oriented to the front.



- Frontal engagement increases the chance of detection and suppression.
- A tank is a bigger target from the flank.

[Figure 2-3.](#) Engage from the flank.

## 2-4. USE TOW STANDOFF

An advantage of a TOW over a tank's main gun is its accuracy beyond 2,000 meters (main gun effective range). The accuracy of a tank's main gun decreases with increased range while that of a TOW does not. Positioning TOW to exploit its maximum range decreases vulnerability to detection and return fire. This range advantage, called standoff, is the difference between the tank's maximum effective range and the TOW's maximum range ([Figure 2-4](#)). At its maximum range of 3,750 meters, a TOW 2 has a 1,750-meter standoff advantage against a tank with maximum effective range of about 2,000 meters.

[Figure 2-4.](#) Standoff range.

**NOTE: The T-64B and T-80 Soviet main battle tank can fire ATGM through their main gun tubes. The postulated range is 4 kilometers, in which case the standoff does not exist. Threat armored vehicles can also fire HE to suppress TOW gunners at ranges greater than 2,000 meters.**

## 2-5. USE COVER AND CONCEALMENT

1. Cover is protection from the fire of enemy weapons and from enemy observation ([Figures 2-5](#) and [2-6](#)). It may be natural or man-made.
  - (1) Natural cover includes--
    - Reverse slopes.
    - Ravines.
    - Hollows.
  - (2) Man-made cover includes--
    - Fighting positions.
    - Walls.
    - Rubble.
    - Craters.

[Figure 2-5.](#) Cover.

[Figure 2-6.](#) Reverse slope.

2. Concealment is protection from observation ([Figure 2-7](#)). Concealment hides a soldier, unit, or position from ground and aerial observers and gunners. Concealment includes not only camouflage but also light, noise, movement, and odor discipline. With recent improvements in night vision and other detection devices, darkness alone does not constitute concealment. Leaders must choose inconspicuous positions that avoid skylining the launcher.

[Figure 2-7.](#) Concealment.

3. Cover and concealment are critical to the survival of antiarmor weapons systems. The TOW system has several inherent weaknesses (long time of flight, slow rate of fire, distinctive signature, gunner exposed during tracking [except ITV]). The effects of the weaknesses can be reduced through cover and concealment. Leaders should look for terrain that affords good cover and concealment. Conspicuous terrain features, such as lone buildings or trees, hilltops, and other obvious positions, should be avoided. To further reduce vulnerability to enemy fire, antiarmor weapons should be dispersed laterally and in depth so that no two weapons can be suppressed at the same time by a single weapon. If possible, antiarmor squads should be at least 300 meters apart ([Figure 2-8](#)).
4. These aspects of cover and concealment also apply to movement and the selection of routes.

[Figure 2-8](#). Dispersion between squads.

## 2-6. EMPLOY IN DEPTH

Antiarmor fire should be employed in depth. In the offense, routes and firing positions should be selected to support the forward movement of attacking units. In the defense, antiarmor squads may be either forward initially and moved to in-depth positions as the enemy closes; or, they may be positioned initially in depth.

## 2-7. EMPLOY AS PART OF A COMBINED ARMS TEAM

Skillful integration of infantry, engineer, and indirect-fire assets will significantly improve the survivability and lethality of antiarmor units.

- a. Infantry is needed to provide local security, to emplace obstacles (wire, mines), and to engage dismounted infantry and armor.
  - b. Engineer assets assist in shaping the engagement area by emplacing obstacles that slow or temporarily stop the enemy. This increases the enemy's time in the kill zone and causes him to present a flank shot as he maneuvers around an obstacle.
  - c. Indirect fires (artillery and mortars) are used to slow the enemy rate of advance, break up formations, cause vehicles to button up, and suppress accompanying artillery and ATGM. They are also used to help conceal friendly launch signatures and cover the movement of TOW squads from one position to another. TOW platoon leaders can request indirect fires by contacting either the battalion mortar platoon or the direct support artillery battalion. Frequencies, call signs, and priorities of fire must be coordinated.
-

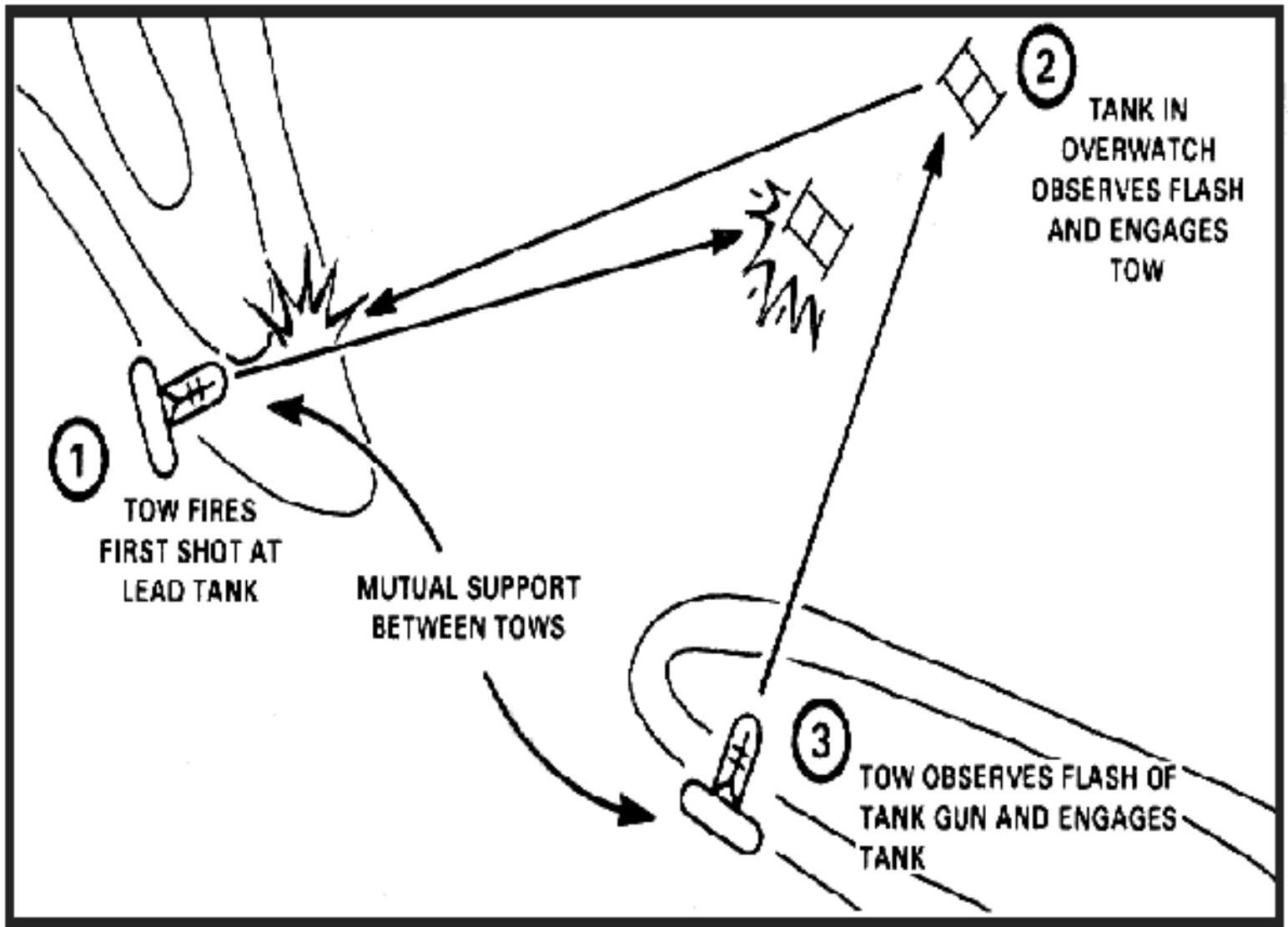


Figure 2-1. Employment by section.

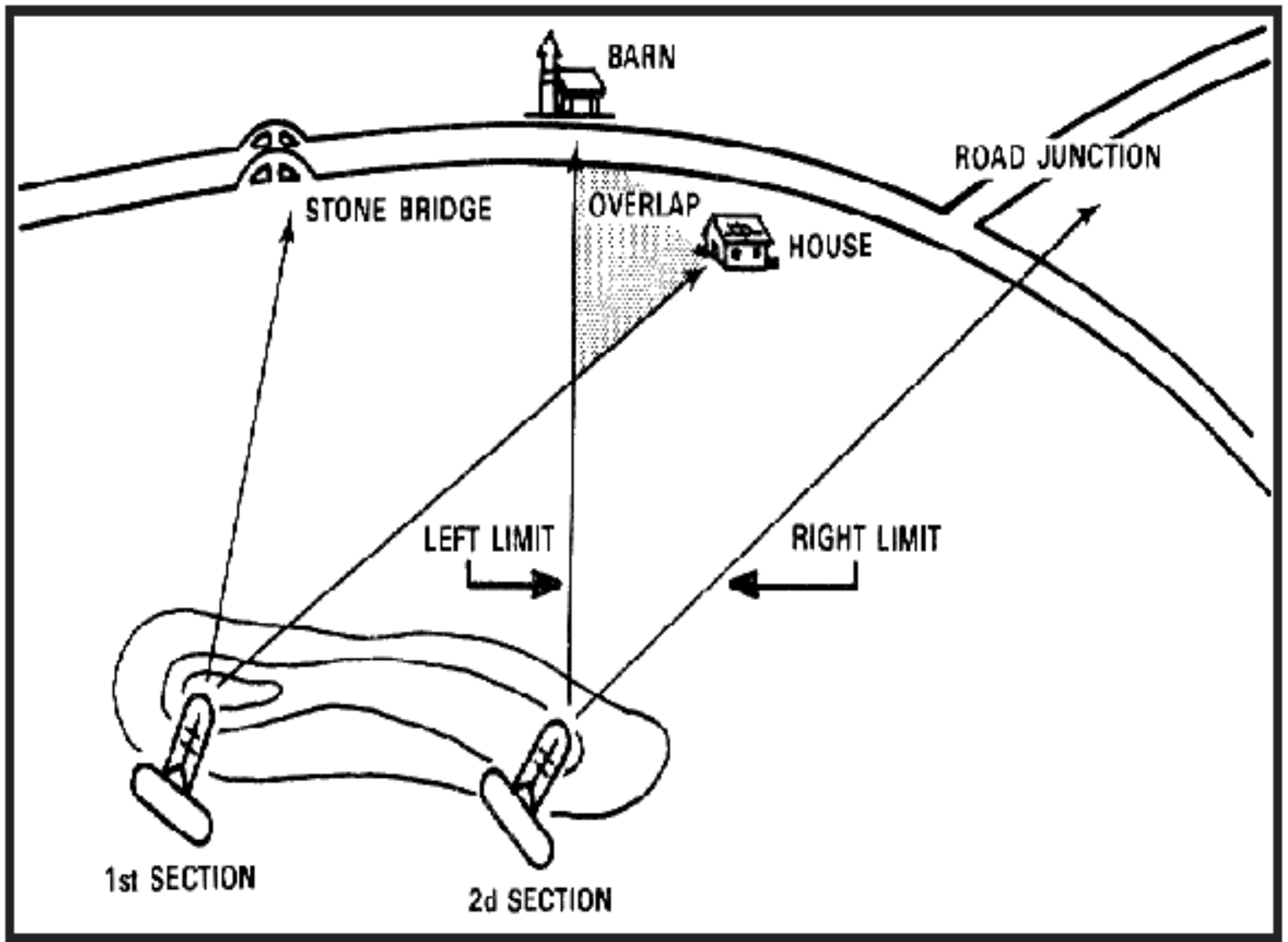


Figure 2-2. Overlapping sectors of fire.

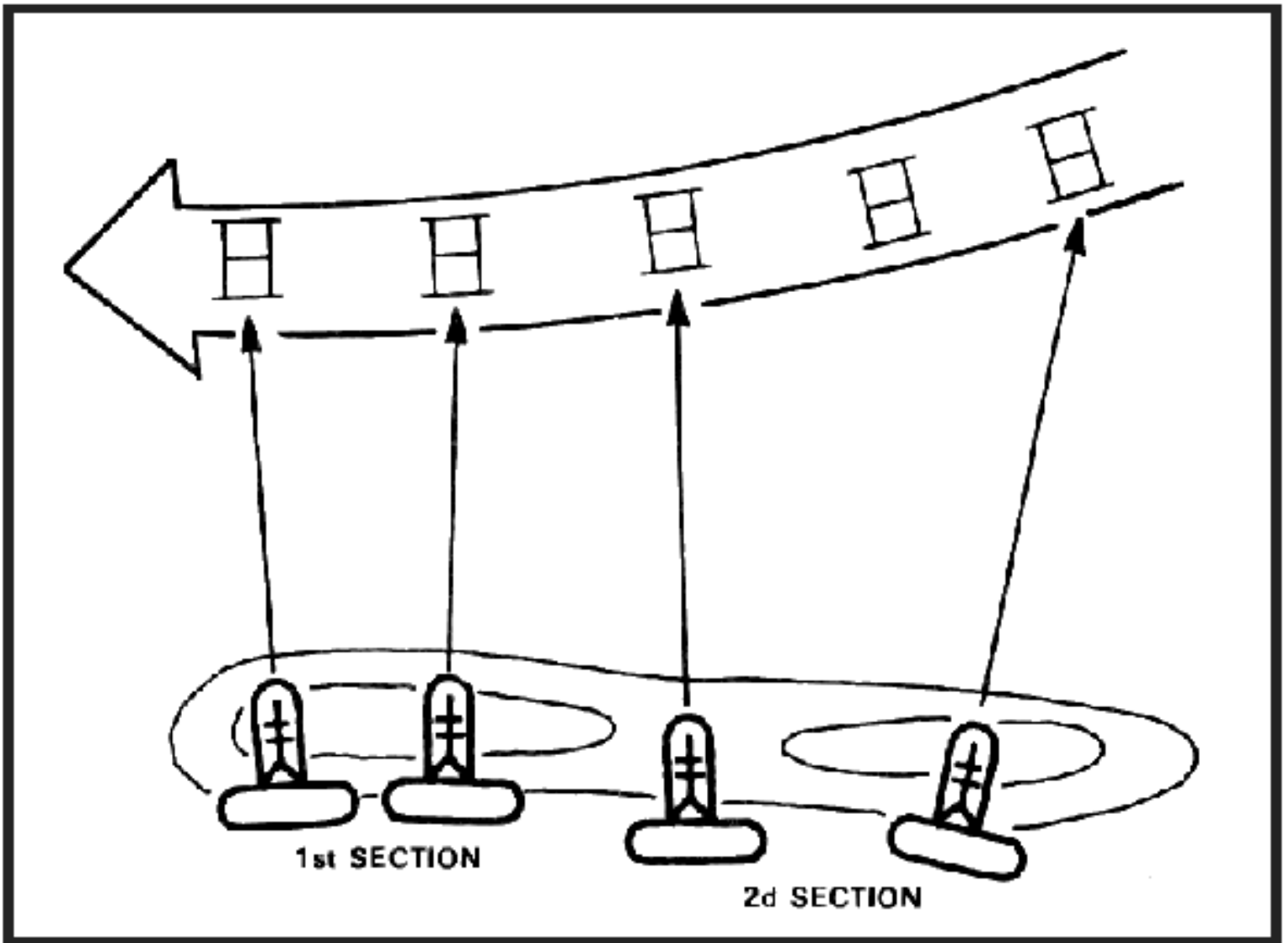


Figure 2-3. Engage from the flank.

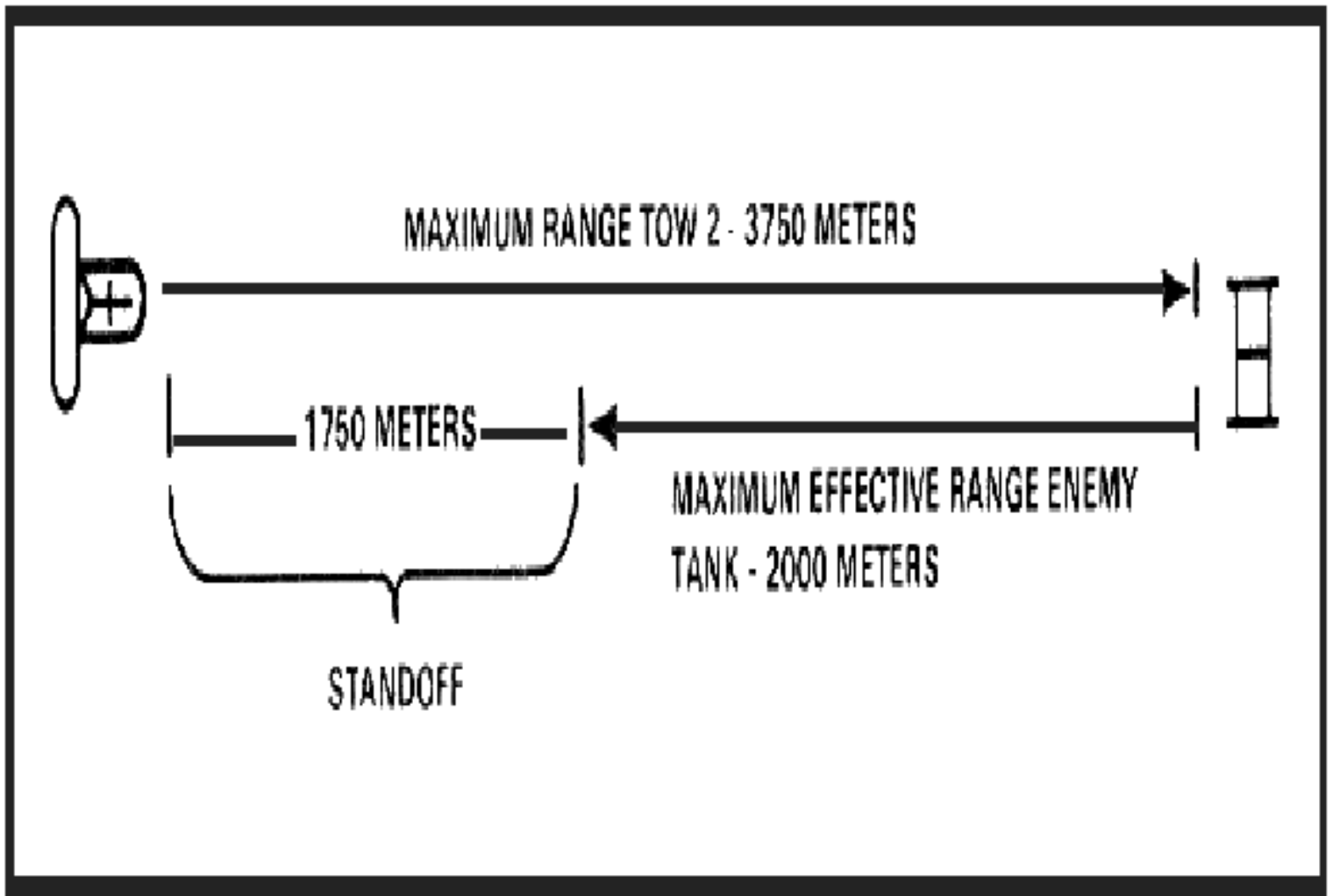


Figure 2-4. Standoff range.



Figure 2-5. Cover.



Figure 2-6. Reverse slope.



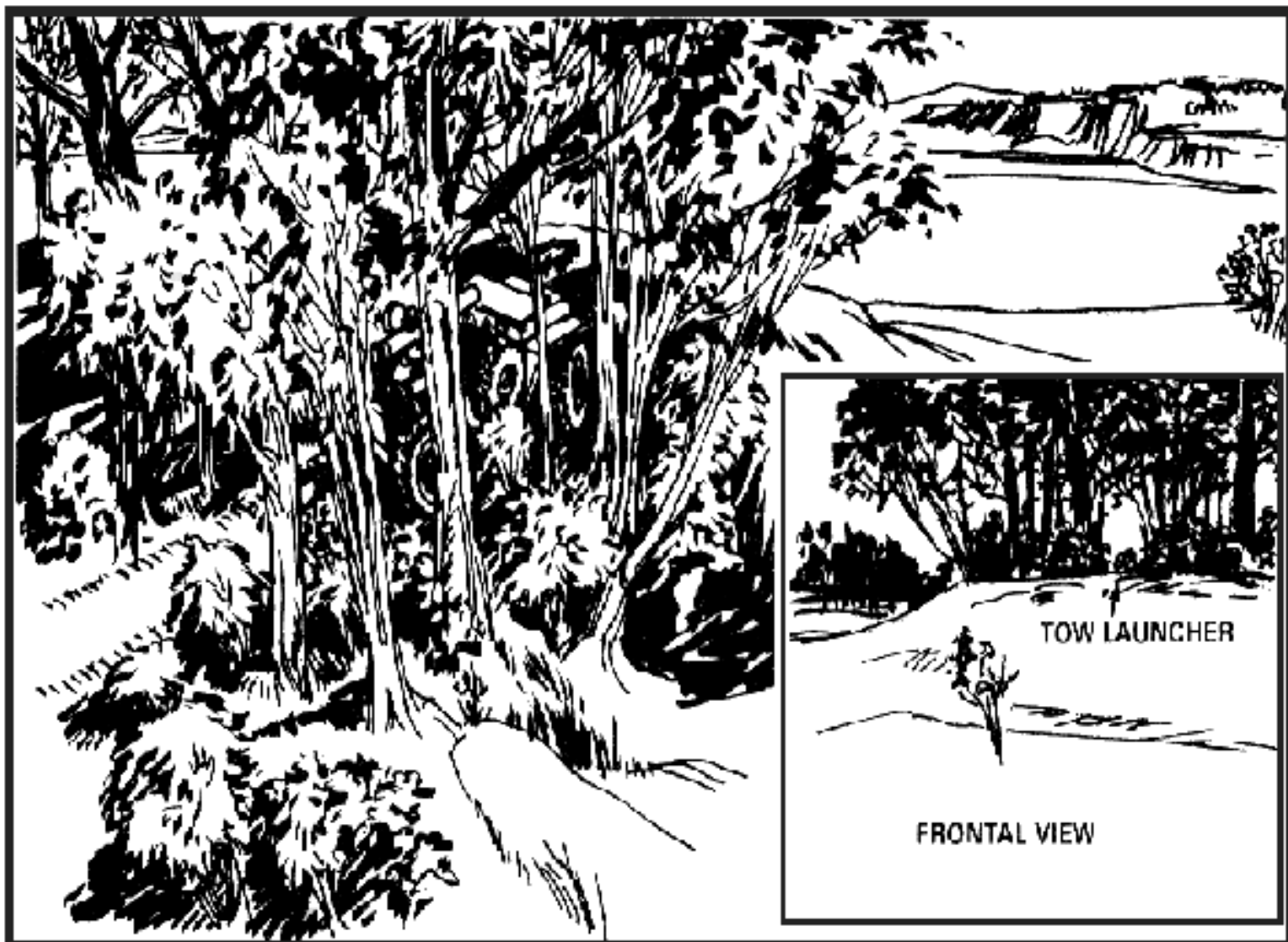


Figure 2-7. Concealment.

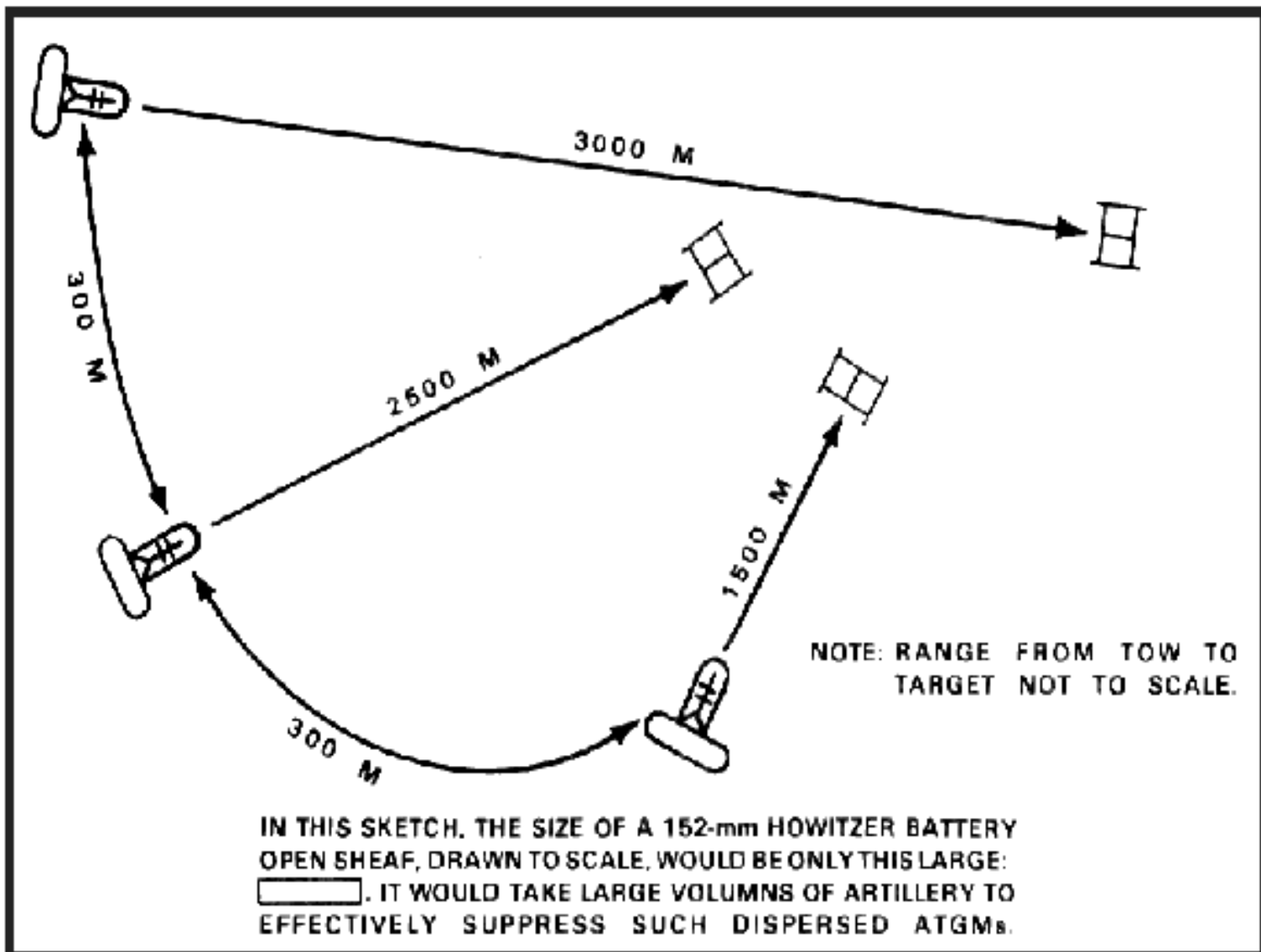


Figure 2-8. Dispersion between squads.

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# CHAPTER 3

## EMPLOYMENT OF THE ANTIARMOR PLATOON

When fighting a numerically superior enemy force, fast and efficient target engagement is critical to winning. Speed of target engagement depends on each TOW squad's proficiency in target acquisition, in target identification, and in determining whether the target is engageable by the TOW. Because of dust and smoke, locating and identifying the enemy will be a problem. As the battle progresses, and friendly and enemy units become mixed, acquiring and identifying targets will be crucial. TOW crews should be trained to acquire targets that are using terrain, vegetation, and smoke for concealment. They should also be trained to identify targets as friend or foe.

### Section I. TARGET ACQUISITION

Knowing where to look is the first step in acquiring targets. Once crew members know where to look, they must know how to look to rapidly detect targets.

#### 3-1. WHERE TO LOOK

The primary targets for antiarmor platoons are armored vehicles. Therefore, units should look for terrain where armored targets are most likely to appear. Knowing Threat armor tactics and the characteristics of Threat vehicles will help squad members to recognize terrain where they will most likely be employed.

- a. Threat tactics stress speed and massive firepower to overwhelm and to destroy an opposing force. Their doctrine dictates an average daily rate of advance of 40 to 50 kilometers under conventional conditions and 30 to 50 kilometers under nuclear conditions. To do this, armored vehicles require ground for rapid movement and adequate space to maneuver and fire. High-speed avenues of approach, such as roads, ridges, and flat or rolling terrain that is relatively open, should be kept under constant observation. A thorough map reconnaissance is useful to pinpoint those areas. It includes evaluating the terrain from the Threat's viewpoint. The questions to be asked are: "How can the enemy use the terrain?" and "Where is he most likely to appear first?"
- b. Terrain is continually changing because of clearing areas for farming and constructing new roads and buildings. Trafficability of terrain is affected by weather. Therefore, a ground reconnaissance is needed to obtain current and more detailed information of roads, trails, man-made objects, density of trees and brush, and the seasonal conditions of streams and rivers. If a ground reconnaissance is not possible, use an aerial reconnaissance or recent aerial photographs.
- c. Knowing the mobility characteristics of Threat armored vehicles also assists antiarmor platoons in determining where to look. If the situation permits, tank and motorized rifle units avoid terrain or obstacles that can stop or impede movement, such as--

- (1) A slope steeper than 30 degrees.
- (2) A sturdy wall or an embankment 3 feet high or higher.
- (3) A ditch or a gully 9 or more feet wide and 3 or more feet deep.
- (4) Hardwood trees 10 inches or larger in diameter and 10 feet or less apart.
- (5) A water obstacle at least 5 feet deep. (Warsaw Pact tanks are equipped with snorkels, but the snorkel is time-consuming to install.)
- (6) Swampy or rough, rocky terrain.
- (7) Built-up areas where armored vehicles are restricted to moving on confined roads, through park areas, or across sports fields.

d. Armored vehicles can breach some obstacles or move through restrictive terrain, but their movement is slowed considerably. For this reason, a commander may keep those areas under observation and move TOWs only to react to Threat initiatives coming from those areas.

### 3-2. HOW TO LOOK

Observation of likely armor approaches must be continuous, even when the unit is moving.

- a. Sectors of Observation. The TOW squad leader assigns areas of responsibility to the squad members to ensure the entire sector (assigned by the section leader) is covered. The TOW gunner uses the TOW sight to observe the sector from the maximum engagement line back to about 2,500 meters. The squad leader uses binoculars to observe from 2,500 meters back to about 1,000 meters. The driver is responsible for local security and observes the area from 1,000 meters back to the TOW position. The exact distances each squad member is responsible for depends on the terrain and normally is keyed to easily recognizable terrain so the observers have no difficulty recognizing their area of responsibility. Sectors of observation should be rotated periodically so that personnel do not develop a fixation observing the same area.
- b. Scanning Techniques. ([See Figure 3-1.](#)) Proper scanning techniques enable the TOW squads to locate and to identify targets quickly. Using the naked eye, an observer should first make a quick overall search for obvious targets or telltale signatures, such as exhaust smoke or dust. He should also listen for telltale sounds such as engine noises. (If possible, turn off vehicle engines so that sounds of enemy vehicles can be heard.)

[Figure 3-1.](#) Scanning techniques.

- (1) The observer should frequently stop his scan and focus his eyes on a distant object, such as a terrain feature or man-made structure. Otherwise, his eyes tend to relax, and distant objects become blurred. Periodically, the observer should scan the sector without optics and then repeat the above procedure.
- (2) If a target is detected, it should be kept under observation until it is engaged. Otherwise, that target may be difficult to find again. If the observer must look elsewhere, he should note the target's direction of travel in relation to a prominent terrain feature. The terrain feature is then used as a reference point in finding the target again.

(3) During darkness, an observer should look a few degrees off to the side of an object rather than directly at it. Because at night, the sides of the eyes are more sensitive to dim light. The eyes should be moved in short, abrupt, irregular movements. The observer should pause a few seconds at each likely target area and look for movement, a light source, or any other target signature.

c. Optics. Using the TOW sights (both optical and night), squad leader's periscope, binoculars, and night observation devices, targets can be acquired at ranges greater than with the naked eye. Thermal night vision sights and devices can also be used for both day and night to acquire targets through smoke, light vegetation, camouflage, and fog.

(1) Because the TOW sights have a limited field of vision, the observer must scan slowly across a sector to avoid missing a target or a target signature. For example, the field of vision of the TOW optical sight at 3,000 meters is limited to an area less than 300 meters wide. The field of view of the nightsight at 3,000 meters is 360 meters. The field of vision with the naked eye is much wider. This means that with the optical sight a much smaller portion of the sector is being observed at any given time.

(2) The TOW 2 nightsight can be used 24 hours a day. The thermal sight differentiates heat sources to detect targets even during the daylight. However, observers must be rotated often when scanning the sector because of operator fatigue. A technique is to scan the sector once with the optical sight, and then with the nightsight. When dismounted, scanning with the nightsight is limited by the amount of operational time available from the nightsight's batteries. Observation time with the nightsight can be increased by alternating observation periods between squads covering the same sector.

(3) Efficiency of binoculars in daylight can be increased by using only one eyepiece or by cupping the eyepiece to prevent additional light from entering the eye. Keeping the binoculars steady by resting them against a steady object also increases efficiency.

(4) At times, an observer with binoculars and a means to communicate with the squad can operate dismounted to better cover a sector. This may be necessary when the vehicle is in a hide position.

### **3-3. OTHER SOURCES OF TARGET INFORMATION**

a. Forward observers (FOs) and tank, scout, and rifle platoons can be valuable sources of target information. Because the TOW platoon may be positioned in greater depth relative to the enemy avenue of approach, forward combat elements may be in a position to detect approaching armor before TOW platoon personnel. This is particularly true during limited visibility. This target information is then passed to the TOW platoon leader.

b. Antiarmor platoons may receive additional target information from ground surveillance radar (GSR) and Remotely Monitored Battlefield Sensor Systems (REMBASSs). These systems are excellent for use during limited visibility. They are frequently attached to battalions for early warning. Examples of target information that can be provided are location, direction of movement, classification of target (personnel, tracked or wheeled vehicle), and rate of speed. Coordination with these units must be conducted. As a minimum, coordination should include--

(1) Sectors of responsibility.

- (2) Radio frequencies and call signs.
- (3) Locations of primary and alternate positions.
- (4) Fire control measures (to assist in transfer of target information).

c. Like TOW, the GSR is a line-of-sight system. It can locate targets at long range (10,000 meters) in all conditions of visibility. The REMBASS has sensors that are frequently emplaced near avenues of approach to detect movement of troops or vehicles.

## **Section II. TARGET RECOGNITION AND IDENTIFICATION**

Potential targets must be identified by their activity, location, or signature (visual or otherwise) before they are engaged. Therefore, squad members must be able to recognize combat vehicles by type; for example, tank, armored personnel carrier, air defense vehicle, and identify them. Identification of friendly vehicles becomes even more difficult when foreign units are operating with or adjacent to US forces. This ability to identify targets is essential when a commander establishes target priorities that require the antiarmor platoon to engage specific types of vehicles. There are several different techniques that can be used in target identification.

### **3-4. TARGET SIGNATURES**

a. Most weapons and vehicles have a telltale signature. Vehicles using diesel fuel emit a lot of smoke. Most modern tracked vehicles use diesel fuel. Tracked vehicles also make more noise than wheeled vehicles. In many cases, different makes of the same type of weapon, such as machine guns, have distinctive sounds. Antiarmor squads can use the different signatures to assist them in locating and identifying targets.

b. Target signatures are detected primarily by sight, hearing, and sometimes smell. If anything suspicious or unusual is detected, it should be checked out thoroughly. Personnel should be alert for strangely shaped objects. A straightedge or even a curve may indicate an enemy vehicle or soldier. The sun reflecting off a flat surface, such as a windshield, is a dead giveaway. Knowing where a particular type of target is most likely to appear assists in identification once a signature is detected.

#### (1) Soldier signatures.

- Foxholes.
- Trash.
- Cut or missing vegetation (cleared for fields of fire or camouflage).
- Freshly dug earth (may indicate foxholes or other fighting positions).
- Voices.
- Light from a match, cigarette, or fire.

#### (2) Tracked vehicle signatures.

- Large dust clouds.
- Diesel smoke.
- Noise made by tracks and engine.
- Vehicle tracks on the ground.

- Distinctive silhouette or shape.
- (3) Antitank signatures.
- Smoke and flash of missile launch.
  - "Swish" of missile launch.
  - Long, thin wires in brush, trees, or along the ground.
  - Tracers of slow-flying ATGMs.
  - Dismounted soldier looking through a periscope-type device (launcher could be up to 80 meters from gunner).
- (4) Obstacles and mines.
- Loose or disturbed dirt in a regular pattern.
  - Areas where large trees have been removed.

### 3-5. TARGET IDENTIFICATION

- a. Not only must the TOW gunner spot targets, he must identify them as either friendly or enemy. One method of making this determination is by knowing where friendly forces are located, and where enemy vehicles should be expected. All vehicles not identified should be tracked until identification can be made. Leaders must keep TOW gunners informed of the tactical situation and the location of friendly units.
- b. Learning to recognize targets by type is not a difficult task, but identifying them as friendly or enemy requires study and attention to detail. This is particularly true of tanks, because both friendly and Threat tanks are similar in design. Side-by-side they may look different, but when camouflaged at a distance of 2,000 to 3,000 meters, it is difficult to see a difference. Antiarmor squads must know friendly and Threat armored vehicles they can expect to see on the battlefield. Training aids, such as GTA 17-2-13, 35-mm color slides, scale models, or pictures from magazines and newspapers, can be used to study the armored vehicles of various nations.
- c. There are identifiable differences between armored vehicles. Because observers often will not be able to see an entire armored vehicle, they should know the different structural characteristics of the vehicles. There are four structural areas on all tanks that can be used to identify them. They are suspension system, turret, main gun, and commander's station.
- d. The type, location, and absence or presence of certain equipment within the four areas will identify any tank in the world. If any two of the areas can be identified, an identification can usually be made. A tank can be identified even if it is in a hull-down position, because three of the four areas--turret, main gun, and commander's station--can normally be seen.
- e. Suspension system. This is the least reliable area for identification, because it is often concealed by vegetation or by terrain. The main features of the suspension system that distinguish different tanks are--
- Road wheels and support rollers.
  - Road wheels only.
  - Number of road wheels.
  - Spacing between road wheels.

- Armored skirt.
- f. Turret. Characteristics of the turret that can be used to distinguish tanks are--
- Position on the hull--well forward, in the center, or to the rear.
  - Presence, absence, or location of searchlight.
  - Shape of turret--rounded, elongated, or boxy.
  - Externally mounted storage racks and other equipment.
  - Main gun. The tank main gun can be identified by--
    - Presence and location along the gun tube of a bore evacuator.
    - Presence of a muzzle brake or blast deflector.
    - Presence or absence of a thermal jacket.
  - Commander's station on some tanks. This can be a hatch, while on others it is a cupola. A cupola is a small turret-like projection on the top of the turret. Additionally, the commander's station is on the left side of some tanks and on the right side of other tanks.

### 3-6. THERMAL SIGNATURES

The introduction of thermal sights has added an entirely new aspect to target identification. The identification of targets by thermal signature is difficult and requires a lot of training. (See FM 23-34 for further training information.)

## Section III. ENGAGEMENT

Before a TOW missile is fired at a target, it must be determined if the target can be engaged. A target can be engaged when it is within range of the missile, when it is exposed so that it can be identified and tracked by the gunner, and when it will remain exposed for the time it takes the missile to fly to the target. Target engagement is also affected by water obstacles and firing limitations (power lines, smoke, fog, snow, and ground clearance). This section provides techniques that can be used by TOW squads to rapidly determine target engagement.

### 3-7. RANGE ESTIMATION

a. Unlike gunners of many other weapon systems, a TOW gunner does not have to know the exact range to a target before he engages it with the TOW. A TOW gunner only has to know when a target is within the range of the TOW. A technique that aids in quickly making this determination is the use of a maximum engagement line.

A maximum engagement line ([Figure 3-2](#)) is an imaginary line drawn across a sector of fire 3,750 meters from a firing position. To establish this line, the squad leader or gunner identifies terrain features at or near his maximum range. Any target crossing or appearing short of this line should be within range. Established soon after a firing position is occupied, the maximum engagement line greatly reduces target engagement times, especially for those targets appearing near maximum range.

[Figure 3-2](#). Maximum engagement line.

b. There are several range determination techniques as follows that can be used to determine a maximum range line or the range to specific targets.



(1) Map and terrain association. The maximum engagement line can be easily determined from a map. To do this--

- Draw an arc on the map across the assigned sector of fire 3,750 meters from the firing position(s).
- Examine the map to identify distinctive natural or man-made terrain features that the line touches.
- Study the terrain in the sector of fire using binoculars or the TOW optical sight until all the selected terrain features are located. Those terrain features are connected by an imaginary line from the maximum engagement line.

(2) Range-finding devices. The TOW is not equipped with a range finder, but tanks and FIST are equipped with them. Additionally, GSR can be used to determine ranges out to 10,000 meters. Since those devices are seldom on the TOW position, the maximum engagement line will have to be adjusted right or left, forward or backward, to compensate for their separation from the TOW.

(3) Recognition method. Range determination by recognition is simple and accurate. It is based on target visibility using the naked eye, or sighting through 7-power to 8-power binoculars or the TOW optical sight. The targets listed in [Figure 3-3](#) are recognizable out to the ranges indicated. For example, if a target can be recognized with the naked eye as an armored vehicle or a wheeled vehicle, it is within 2,000 meters. When using this method, terrain, visibility conditions, and target size must be taken into account. Some light and terrain conditions can make a target appear closer, whereas other conditions can make it seem farther away. [Figure 3-4](#) lists some conditions that can have an influence on the apparent range of a target.

[Figure 3-3](#). Range determination recognition method.

[Figure 3-4](#). Conditions affecting range estimation.

(4) Binocular method. The reticle in the standard binoculars can be used to quickly determine if an armored vehicle is within TOW range.

### 3-8. TARGET EXPOSURE TIME ESTIMATION

a. Threat soldiers, like US soldiers, are taught terrain-driving techniques to reduce the exposure time of their vehicles to direct-fire weapons. For that reason, and the flight time of the missile, TOW gunners must know how to estimate if a target will be exposed long enough to engage it.

(1) The 13-power TOW optical sight and the nightsight can be used to estimate if there is enough time to engage a target. This technique is only an approximation, but it is useful when a target suddenly appears in an area that has not been reconnoitered. (See FM 23-34 for detailed information about this technique.)

(2) The reticle in binoculars can be used like the TOW optical sight to estimate if there is enough time to engage a moving target.

b. Even though the techniques above are not exact, they can reduce the number of missiles fired at targets that move behind a covered area before the missile can reach them.

### 3-9. ENGAGEMENT LIMITATIONS

There are several conditions that limit whether or not the TOW may be fired. These include: firing over water, firing over electrical power lines, firing through fires, firing from buildings, and ensuring adequate ground clearance. (See FM 23-34 for information on these limitations to engaging targets with the TOW.)

## Section IV. FIRE CONTROL AND DISTRIBUTION

The success of antiarmor platoons in combat depends on how quickly and effectively they engage targets. All TOW fires must be controlled to ensure full coverage of the target area and to minimize multiple engagement of a single target. This section discusses some standard measures and techniques that allow platoon and section leaders to effectively control and distribute fires in combat.

### 3-10. FIRE CONTROL METHODS

Fire control and distribution measures must be simple and understood. Their use must become routine, without the need for detailed instructions. The following paragraphs discuss the most commonly used measures for controlling the fires of an antiarmor platoon.

#### a. Sectors of Fire and Engagement Areas.

(1) Sectors of fire and engagement areas are specific areas to be covered. They are assigned to each squad, section, and platoon. They clearly identify that part of the battlefield that must be covered by observation and fire.

(a) A sector of fire ([Figure 3-5](#)) can be designated by its left and right limits. The limits of the sector can also be pointed out using easily recognizable terrain features, such as roads, streams, hills, or wood lines. A sector of fire usually extends from a firing position to the maximum engagement range of the TOW.

#### [Figure 3-5.](#) Sectors of fire.

(b) An engagement area ([Figure 3-6](#)) is an area along an enemy avenue of approach defined by easily identified surrounding terrain that facilitates the concentration of fires from multiple weapons. Engagement areas may be used at platoon, company, and battalion level. Other measures, such as target reference points (TRPs) and phase lines, may be used in conjunction with engagement areas to further control and distribute fires.

(2) In most situations, the terrain and the number and type of weapons available to cover an area dictates how sectors of fire or engagement areas are assigned. They should be assigned so that an area is completely covered with the appropriate type of fire. Mutual support is maintained between squads, and between sections. Mutual support can be improved by assigning primary and secondary sectors of fire ([Figure 3-7](#)). One section's secondary sector of fire should correspond to another section's primary sector of fire to improve mutual support. Fire is shifted to the secondary sector, on order, when there are no targets in the primary sector. It is also shifted to cover another TOW section if that section is forced to move to an alternate position.

#### [Figure 3-6.](#) Engagement area.

**Figure 3-7.** Primary and secondary sectors of fire.

(3) If a mounted avenue of approach is narrow, or if the fire of an entire platoon is needed in a critical area, such as a choke point, overlapping sectors of fire can be assigned. Because this increases the problem of control and the probability of target overkill, additional control measures, such as engagement priorities, fire patterns, and TRPs, are needed. When overlapping sectors of fire are assigned, leaders must select positions that allow them to observe and to coordinate fires.

**b. Target Reference Points.**

(1) A TRP is an easily recognizable point on the ground, either natural or man-made. It is a reference point for designating targets, for shifting fire, or for assigning sectors of fire.

(2) In the defense, TRPs are designated along mounted avenues of approach. In an attack, they are designated on likely enemy locations and on prominent terrain features. To avoid confusion, TRPs should be limited to the minimum number required to distribute and control fire.

(3) When using a TRP to designate targets ([Figure 3-8](#)), compass directions are used (north, southeast, and so forth), rather than right or left, because each squad may be facing the TRP from a different direction.

**Figure 3-8.** Use of target reference points.

(4) TRPs may be used to control both direct and indirect fires. They are normally numbered sequentially using three-digit numbers. When a TRP is recommended and accepted to be used as an indirect-fire target, it is assigned a number from an assigned block of target identification numbers as explained in FM 6-20. A target identification number consists of two letters and four numbers--for example, AB 5010. When applicable, the identification numbers are recorded on range cards and sector sketches for easy reference and coordination. To simplify fire commands for direct-fire engagement, targets may be referred to by the last three digits. (For example, TGT AB 5010 may be referred to as TRP 010.)

**c. Phase Lines.**

(1) A phase line is a linear control measure normally used to control movement ([Figure 3-9](#)). It is also used to control and distribute the fire of several widely separated antiarmor squads or platoons. Any conspicuous natural or man-made linear terrain feature, such as a ridgeline, river or stream, road, or railroad tracks, may be used to designate a phase line.

(2) In either offensive or defensive operations, phase lines can be used to start or stop firing, to shift fire to another sector, or to indicate when squads, sections, or platoons are to move to alternate or supplementary positions.

**Figure 3-9.** Use of phase lines to control fires.

(3) In [Figure 3-9](#), the platoon leader uses phase lines to indicate to his squads when to fire and when to displace to an alternate position.

(4) Phase lines also can be used to specify when target priorities are to change. For example, the platoon leader might say, "I want both sections to engage only tanks until the enemy

reaches PL Silver. When the enemy reaches PL Silver, I want Section 1 to begin engaging BMPs and any command vehicles you can identify."

(5) In addition to being a simple and effective control measure, a phase line can be assigned as an emergency control measure if radio communication is interrupted. In this way, a section leader knows that if the enemy reaches a designated phase line, he carries out his orders without further communication.

#### d. Engagement Priorities.

(1) Usually, targets in formations on the battlefield will vary (tanks, BMPs, BRDMs, BTRs, air defense vehicles). In such situations, TOW fires can be rapidly distributed and effectively controlled by assigning a priority of engagement for all the sections, or by assigning each section a particular type of vehicle to engage initially. For example, one section could engage tanks, and another section could engage command vehicles and BMPs.

(2) This method is particularly effective during offensive or retrograde operations when surprise targets may appear and there is little time for detailed instructions. If a particular target is a threat to a unit, that target must be engaged immediately, regardless of engagement priorities. Code words may be used to change engagement priorities. For example, a code word could be used to shift priority from tanks to air defense vehicles when they are a threat to friendly air operations.

(3) Engagement priorities are useful when sectors of fire have not been assigned or when overlapping sectors of fire have been designated. Like phase lines, engagement priorities are useful if communications are lost.

e. Emergency Signals. Effective fire control is largely dependent upon good communication. Radio is the primary means commanders and leaders have to control their TOW assets. However, radio communication can be lost, especially in a nuclear environment or if the enemy is using electronic warfare. In such cases, emergency signals are used to control fires of squads and sections. Orders must be issued so that personnel know what to do to continue the battle if communications are lost. They must know the alternate signals that will be used. Use of pyrotechnics will often be the only rapid method available to control fires. Their use must follow the communications-electronics operation instructions (CEOI) and be practiced often. Examples of simple signals that the CEOI may specify are--

<u>Signal</u>	<u>Meaning</u>
Red star cluster	Stop firing
Green star cluster	Start firing
White star cluster	Switch to secondary sector
Red and white combination	Switch to alternate sector

f. Established Fire Commands. Because speed and accuracy are vital when engaging targets, fire commands must be clear and concise. In the stress of battle, a platoon leader or section leader must be able to quickly analyze a situation, and follow up with concise, understandable, and complete fire commands.

## (1) Format.

(a) Use of a standard format for fire commands (examples follow) ensures that all necessary information is given in minimum time. The elements of a fire command, issued in sequence, are--

<u>ELEMENT</u>	<u>EXAMPLE</u>
ALERT	TANGO FOUR ONE - THIS IS TANGO FOUR ZERO
DESCRIPTION	FOUR TANKS AND THREE BMPs
LOCATION	EAST OF TRP ZERO ZERO FOUR
CONTROL (OPTION)	DEPTH
EXECUTION	FIRE or AT MY COMMAND
CLOSING	CEASE TRACKING

(b) To shorten the fire command, the control element is omitted when not needed. Also, the description may be omitted when target priorities have been assigned, for example, when the target is automatically tanks unless otherwise specified. That simplifies the command when tanks and BMPs appear at the same time and the platoon or section has been directed to engage only tanks.

## (2) Elements.

(a) The following sample CEOI extract identifies the elements involved in the sample fire commands on the following pages.

## SAMPLE CEOI EXTRACT

	CALL SIGN
PLATOON	C5T
PLATOON LEADER	C5T40
1ST SQUAD (1st section leader)	C5T41
2D SQUAD	C5T42
3D SQUAD (2d section leader)	C5T43
4TH SQUAD	C5T44
PLATOON SERGEANT	C5T45

(b) Normally, the platoon leader gives the fire command to the section leaders. Because each squad is in the platoon radio net, the section leaders need not repeat the entire fire command to the other squad in each section unless necessary. If more instructions are needed, only those elements of the fire command that need to be changed are given. Once the platoon leader completes a fire command, each section leader acknowledges in turn. The second squad in each section should then acknowledge in turn so that each section leader knows the squads have received the command and understand it.

## (3) Examples.

(a) Example 1. Platoon leader's fire command for both sections of the platoon to engage assaulting tanks.

TANGO (entire platoon) - THIS IS TANGO FOUR ZERO  
TEN TANKS  
DIRECT FRONT  
CROSS  
FIRE

(b) Example 2. Platoon leader's fire command to engage assaulting BMPs and tanks. The platoon leader alerts the entire platoon, indicating that he wants both sections to fire. He then specifies that Section 1 will engage the BMPs; TANGO FOUR ONE - BMPs; and that Section 2 will engage the tanks; TANGO FOUR THREE - TANKS. Because the platoon leader leaves out the control element, each section leader will add it by telling the other squad, DEPTH, CROSS, if necessary for control within the section. **FRONTAL FIRE** is understood unless the section leader specifies otherwise.

TANGO - THIS IS TANGO FOUR ZERO  
BMPs AND TANKS  
WEST OF TRP ZERO ZERO SEVEN  
TANGO FOUR ONE - BMPs  
TANGO FOUR THREE - TANKS  
FIRE

(c) Example 3. The platoon leader's command to continue the engagement after the BMPs are destroyed. The platoon leader instructs Section 1 to shift fire to the tanks and continue to engage. Because the control element is omitted, **FRONTAL FIRE** is understood. Although the command does not mention Section 2, that section will continue to fire based on its last instructions.

TANGO FOUR ONE - THIS IS TANGO FOUR ZERO  
TANKS

(d) Example 4. Platoon leader's command to stop the engagement.

TANGO - THIS IS TANGO FOUR ZERO  
CEASE FIRE

### 3-11. FIRE PATTERNS

Fire patterns are standard techniques for the distribution of tank and antiarmor fires on multiple targets. They are most often used when terrain-oriented fire-control measures (TRPs, engagement areas) have been identified. When they are used, fire patterns are announced as part of the section fire command. The three basic fire patterns are frontal, cross, and depth.

#### a. Frontal Fire.

(1) Frontal fire ([Figure 3-10](#)) is used when targets are dispersed laterally from the friendly direction of fire. In employing frontal fire, flank squads engage flank targets first. As targets are destroyed, fire is shifted toward the center of the formation.

[Figure 3-10](#). Frontal fire.

(2) Frontal fire is most effective against an enemy dispersed laterally, moving laterally across a sector of fire. It is least effective when target vehicles are moving toward the firing positions. This is because target vehicles' observation and firepower are oriented toward the platoon, and the squads are firing into the thickest (front) armor on the target vehicles.

b. Cross Fire. Cross fire ([Figure 3-11](#)) is used when targets are dispersed laterally and moving toward the firing positions. It is used for flank shots and to avoid detection when the target is moving toward firing positions. Each squad engages a target on the opposite flanks. As targets are destroyed, fire is shifted toward the center of the formation.

[Figure 3-11](#). Cross fire.

c. Depth Fire. Depth fire ([Figure 3-12](#)) is employed when targets are exposed in depth. One section engages the nearest targets while the other section engages the farthest targets. Fire is then shifted toward the center of the formation. The unit SOP must specify which section engages near targets and which engages far targets.

[Figure 3-12](#). Depth fire.

d. Adjustments to Fire Patterns. Fire patterns are changed as needed when the enemy adjusts his formation or direction of movement after being engaged. Enemy vehicles will not be in easily recognizable formations. The formations will more likely appear as a mass of vehicles because of uneven terrain and the viewing aspect. The fire pattern selected should be based on how the formation appears in relation to the firing position and the section leader's or platoon leader's estimate of how to best engage the enemy.

## 3-12. FIRE PLANNING

Fire planning is an integral part of the troop-leading procedure. It starts as soon as a leader receives a mission and continues until the mission is accomplished. The primary goal of fire planning is to prescribe how fire is to be distributed and controlled to best support an operation. The fire plan establishes the measures a platoon leader needs to follow to adequately distribute and control the fires of his platoon. Fire planning also includes indirect fire; this paragraph discusses only direct-fire weapons.

a. Assignment of Sectors. The platoon leader assigns general positions to his sections that will cover his assigned sector of fire. He defines the limits of each sector by easily identifiable terrain features. The TOW section leader selects the precise weapon positions, and continues the fire planning process by drawing a sector sketch.

b. Sector Sketch.

(1) Each section leader prepares a sector sketch in two copies to help him coordinate the fires of his squads ([Figure 3-13](#)). He keeps one and gives the other to his platoon leader. The sector sketch shows--

- The main terrain features in the sector of fire and the ranges to them.

- The primary and secondary sectors of fire of his squads.
- Maximum engagement lines.
- Engagement areas.
- Target reference points.
- Dead space.
- Phase lines to start firing, or to indicate when the squad is to disengage.
- Obstacles and indirect-fire targets.

[Figure 3-13.](#) Section sector sketch.

(2) The sector leader prepares a sector sketch for his primary, alternate, and supplementary positions.

(3) The platoon leader checks weapon positions to ensure that the TOW systems are sited correctly. He then uses the section sector sketches to make a platoon sketch ([Figure 3-14.](#)) He makes two sketches; he keeps one and gives one to his company commander or to the commander of the company he is supporting.

[Figure 3-14.](#) Platoon sector sketch.

(4) The platoon leader also uses the section sector sketches to develop an engagement matrix ([Figure 3-15.](#)) This matrix shows him at a glance what engagement areas can be covered by each section, from each position.

[Figure 3-15.](#) Platoon engagement matrix.

c. Defensive Fire Planning. To develop a defensive fire plan, the antiarmor element leader--

(1) Assigns a primary and a secondary sector of fire, or an engagement area and a primary and one or more alternate positions to each subordinate unit.

(2) Designates targets and additional control measures, such as TRPs, phase lines, or target priorities, to coordinate the fire when more than one section is firing into the same engagement area or sector.

(3) Integrates target information from subordinate leaders (normally provided on section sector sketches and/or individual squad range cards). He then reviews this target information to ensure that fire is properly distributed across his sector and that sufficient control measures have been established.

(4) Coordinates and integrates his TOW fires with those of tanks and other antiarmor weapons.

(5) Completes the fire plan and gives a copy of the sector sketch to the control headquarters or to the supported unit commander; for example, the antiarmor company commander or task force commander.

d. Offensive Fire Planning. Offensive fire planning relies more on fire patterns and SOPs to bring effective fire on the enemy than does defensive fire planning. This is especially true in situations, such as movement to contact, when knowledge of the enemy is vague, and when the terrain is unfamiliar. To compensate for the lack of familiarity with the terrain, a thorough map



reconnaissance along with terrain information from the battalion S2 can be used. The platoon leader uses the information and the commander's scheme of maneuver to--

- (1) Select positions from which his sections can overwatch the forward movement of, or provide a base of fire for, the supported unit.
- (2) Ensure that TOW fires are integrated with other overwatching fires. This can be done using TRPs, phase lines, priorities of engagement, and sectors of fire much the same as in defensive fire planning.
- (3) Plan how targets will be designated by the assaulting infantry for engagement by TOWs. This can be done by colored smoke, by signal panels, or by other means.
- (4) Identify areas where TOW overwatch is not possible and advise the commander so that other weapons may be given the task.
- (5) Identify routes between positions along the axis of advance or in the zone of action that allow rapid movement, and also provide security for the moving antiarmor sections.
- (6) Complete the plan with approval of the supported commander and brief subordinate leaders.

### 3-13. ANTIARMOR RANGE CARD

A range card is a sketch or diagram of the terrain that a weapon is assigned to cover by fire. It shows possible target areas and terrain features plotted in relation to a firing position. The information on a range card is used for planning and controlling fire, for rapidly detecting and engaging targets, and for orienting replacement personnel and units.

#### a. Preparing the Range Card.

- (1) Each gunner prepares the range card for his squad. He prepares one for each primary, alternate, and supplementary position, and for any static position when enemy contact is possible; for example, a position in an assembly area.
- (2) The gunner prepares a range card as soon as possible after moving into a firing position. Two copies of the range card are prepared. One copy is kept with the squad and the other is given to the platoon leader. The platoon leader uses the range cards to prepare a platoon sector sketch. It is best to use standard, printed range card forms. If no forms are available, anything that the gunner can write on, such as a piece of notebook paper, may be used. (For procedures on how to prepare an antiarmor range card, see FM 23-34.)

#### b. Staking the Position.

- (1) After a range card has been completed, the firing position should be marked with ground stakes. This is done to enable the squad, or a squad from a relief unit, to occupy the firing position and use the data from the range card for the position. Three stakes are needed to effectively mark the position ([Figure 3-16](#)).

#### [Figure 3-16](#). Staking the position.

- (2) One stake is placed in front of, and centered on, the vehicle. It should be long enough so that the driver can see it as he moves the vehicle into position. The other two stakes are placed

parallel to the left side of the vehicle and lined up with the hub on the front and rear wheels. The stakes should be placed close to the vehicle, with only enough clearance to allow a driver to move into the position without knocking them down. The stakes should be driven solidly into the ground. Engineer tape or luminous tape can be placed on the friendly side of the stakes to make it easier to see them during limited visibility.

(3) To reoccupy a marked position, the driver aligns his vehicle on the front stake and moves forward slowly until the two stakes on the left of his vehicle are centered on the front and rear hubs. Units equipped with ITVs use the azimuth indicator on the ITV for positioning stakes and reoccupying positions. (For details on this procedure, see FM 23-34.)

## **Section V. FIRING POSITIONS**

The use of firing positions by TOW squads applies in both the offense and the defense. Because of the fluid nature of offensive operations, TOW firing positions are most often unprepared defilade positions. They are occupied while en route to an objective. When moving, platoon and section leaders continuously search for covered and concealed firing positions and routes to them. Tentative firing positions and routes should be selected from a map reconnaissance whenever a visual reconnaissance of the terrain cannot be made. In the defense, firing positions are usually characterized by improved frontal and overhead protection because the defender has more time to gain a detailed knowledge of the terrain to increase his protection and concealment. A TOW firing position must provide protection for the weapon system and its crew and allow target engagement. When selecting firing positions, emphasis should be placed on being able to engage the enemy.

### **3-14. CONSIDERATIONS FOR TOW POSITIONS**

In the offense, the TOW is employed on its weapon system carrier (M151, M966, M901, or M113). In defense, it may be employed on its carrier vehicle, or it may be tripod-mounted. In deciding whether to employ the TOW mounted or dismounted, a platoon leader must consider several factors. It may be impossible or impractical to move the carrier vehicle into the firing position and, at the same time, be able to conceal the vehicle or its tracks leading into the position. It may be best to dismount the TOW system and park the vehicle in a concealed location to the rear of the firing position. In any case, the leader must consider the loss of mobility when the TOW system is not mounted.

### **3-15. SELECTION**

a. The biggest danger to TOW squads is indirect fires. For this reason, cover, concealment, camouflage, and selection of firing positions are critical. Squads must avoid selecting firing positions easy to identify by a map reconnaissance. This is particularly important since Threat artillery and mortar fires supporting an attack are normally fired from a planned schedule. Proper selection of positions can avoid much of these fires. The Threat has a limited ability to fire on targets of opportunity.

b. Each squad leader should select firing positions that afford maximum protection while allowing the gunner to engage the targets. Selection of firing positions begins when each section is assigned a mission, a sector of fire or engagement area, and a general location. The section leader designates a general firing position for each of his squads, and may designate the exact location for the squad he is with. If time is available, the section leader may designate the exact position for the other squad.

c. Ideally, each squad's position should provide--

- Cover, especially to the front.
- Concealment from ground and aerial observation.
- Good observation and fields of fire into the assigned sector of fire or engagement areas.
- Covered and concealed routes to and between positions.
- Mutual support between squad positions and with other elements.

d. Positions should be selected below ridgelines and crests, preferably on the sides of hills. Positions and the routes to the positions should be as dry and level as possible. Avoid swampy areas and steep hillsides. Avoid positions on or near prominent terrain features.

e. At night or during other limited visibility, TOW squads should be positioned where they can detect and engage targets. Leaders should not assume that darkness will hide their firing positions. Night vision devices available to Threat forces allow them to see almost as well in darkness as in daylight. Noise can be heard farther away during the night. Thermal night vision devices can sense the heat given off by a hot or even a cooling engine. They also allow the viewer to see through smoke, fog, or even light foliage or camouflage.

f. Once a position is selected, a unit should strive to improve it for as long as it is occupied. If a unit is to stay in a position for a long time, extensive improvements can be made, especially with engineer assistance.

### 3-16. PRIMARY, ALTERNATE, AND SUPPLEMENTARY POSITIONS

Each squad should have a primary firing position and as many alternate positions as practical. Depending on terrain and mission, a supplementary position may also be assigned ([Figure 3-17](#)). Primary and alternate positions are used in the attack and the defense, while the supplementary position is used only in the defense.

[Figure 3-17](#). Primary, alternate, and supplementary positions.

a. Primary Position. This is the initial firing position from which a squad covers an assigned sector of fire or engagement area. It should be the best location from which to engage vehicles. Its general location is normally designated by the platoon leader or the section leader.

b. Alternate Position. An alternate position must allow a squad to cover the same area as was covered from the primary position.

(1) Whenever possible, an alternate position should be 300 meters or more from the primary or other alternate positions to reduce the possibility of indirect fire suppressing the primary and alternate positions at the same time. Terrain may not allow for this, but it should always be considered when selecting alternate positions. The platoon leader or section leader may designate the location of an alternate position.

(2) When the squad leader selects the alternate position(s), he should report each location to the section leader and the platoon leader. During the battle, he should also report when he moves to an alternate position. Besides moving to an alternate position when the primary position begins receiving fire, a squad may also move to it to confuse the enemy. Given

adequate time in the defense, each alternate position should be prepared with as much care as the primary position.

c. **Supplementary Position.** This position is designated to cover an area or possible enemy avenue of approach that cannot be covered from the primary or alternate positions. A supplementary position is usually designated to cover areas or approaches to the flank or rear of a unit. As a minimum, a supplementary position should be reconnoitered and a range card prepared for it. At times, the OPORD will specify that the position is to be prepared. Normally, a supplementary position is only occupied on order.

### 3-17. OCCUPATION

As it occupies a firing position, a unit should be careful to avoid detection. Careless occupation can compromise a well-concealed position. Rapid movement into firing positions should be avoided, especially in dusty areas or areas where vegetation may be disturbed.

a. A position should be approached from the rear or flank using terrain-driving techniques. The vehicles should be stopped short of the position in a covered and concealed location. Section and squad leaders should then dismount and move forward to reconnoiter the area. During the reconnaissance, they select exact firing positions, determine if the TOWs should be employed mounted or dismounted, and select a route into each position. Both the position and the route selected should limit possible observation.

b. Once the leaders have completed their ground reconnaissance, they call the vehicles forward and guide them into position. Section and squad leaders may consider backing the vehicles into position. This will permit rapid displacement from the position without having to move toward the enemy or take the time to turn around. Telltale signs, such as vehicle tracks, that could be detected by aerial observation are eliminated.

c. Platoons and sections must develop an SOP for the occupation of a firing position that includes the sequence of action and the priority of work. This ensures that all squad members know what is expected of them and can work without lengthy instructions.

### 3-18. PREPARATION

Preparation of a firing position begins upon occupation and continues until the position is vacated. This includes the initial digging in, range card preparation, and camouflaging. After the position is occupied and security is established, the first step in preparation of the position is setting up and sighting the weapon system on its sector of responsibility, and preparing a range card. During the preparation of the position, the squad must always be prepared to fight. Keeping the sector of responsibility under constant observation allows the squad to react quickly if the enemy appears before preparation of the position is completed.

a. Once the position is dug, it must be camouflaged to blend with the surrounding terrain. Sod, leaves, brush, grass, overturned dirt, or any other natural material should be used. Camouflage nets or other man-made materials can be used, but they are most effective when augmenting natural camouflage ([Figure 3-18](#)). The position should be made to look as natural as possible.

[Figure 3-18.](#) Camouflage the position.

b. Remove any loose materials in the TOW's backblast area. Wet down the area to reduce the

signature of the TOW.

- c. The position should only be approached from the rear, leaving no visible trail. Any footprints around or leading into the position should be wiped out or covered.
- d. The TOW launcher can easily be detected if it is above ground level, especially during daytime. To reduce the possibility of detection, the launcher should be kept below ground level until needed. To accomplish this, release the friction lock on the rear leg and slide the leg back into the notch at the rear of the position. Make sure that no dirt or debris gets into the launch tube.

### 3-19. TYPES OF POSITIONS

a. Mounted Position. The mounted firing position is characterized by a hull-down posture where the TOW vehicle is behind either natural or constructed cover with only the TOW launcher exposed.

- (1) Natural cover is best and is the easiest cover to prepare and camouflage ([Figure 3-19](#)).

[Figure 3-19](#). Natural hull-down position.

- (2) When natural cover is not available, hull-down positions can be excavated with engineer assistance ([Figure 3-20](#)). When hide positions are used, the primary firing positions should also be hull-down ([Figure 3-21](#)). Hull-down positions should be selected or constructed so that the TOW vehicle can move quickly to complete defilade, if enemy fire becomes accurate. Routes into and out of hull-down positions should also have complete defilade.

[Figure 3-20](#). Excavated hull-down position.

[Figure 3-21](#). Hide position to hull-down position.

b. Dismounted Position. The dismounted positions must protect the squads from direct and indirect fire through cover and concealment. Dismounted positions are usually dug in with overhead protection, and are positions that are intended to be retained. A dismounted TOW position is extremely large. Overhead cover must be high enough above the traversing unit to allow the bridge clamp to be raised and to allow for inserting the indexing lugs on the encased missile into the launch tube indexing slots. As a result, overhead cover is used only when it can be properly camouflaged and concealed.

- (1) When constructing a dismounted position, the TOW system should not be dismounted from its vehicle until the position will support and protect its employment. Only the tripod is used to outline the dismounted position ([Figure 3-22](#)).

[Figure 3-22](#). Outline of dismounted position.

- (2) A parapet to the front and flanks at least 18 inches thick provides additional protection against small-arms fire and from mortar and artillery fragments. There must be 9 inches of clearance between the bottom of the launch tube and the parapet. A hole must be dug between the tripod legs for the missile guidance set ([Figure 3-23](#)). To ensure adequate line-of-sight clearance, between 500 and 900 meters in flat terrain, the position should not be more than 24 inches deep.

[Figure 3-23](#). Position of missile guidance set.

(3) Overhead protection ([Figure 3-24](#)) is provided for squad personnel and missiles by digging squad positions on each side and to the rear of the position.

[Figure 3-24](#). Overhead cover.

(4) The overhead cover is constructed at ground level to make the position more difficult to detect. Logs, 4 to 6 inches in diameter, covered by about 12 to 14 inches of dirt, provide adequate protection against mortar or artillery fragments.

(5) To keep the position dry, a layer of waterproof material, such as packing material or a poncho, should be laid over the logs before adding the dirt. If sandbags are used, they also should be covered with waterproof material because, when wet, they become heavy and may cause a cave-in.

c. Hunter-Killer Position. To conduct a hit-and-run antiarmor ambush, a small position may be created that is just large enough to conceal the system and crew until it executes the ambush. These positions use no overhead cover, and normally take advantage of existing terrain features, such as folds in the ground.

d. Urban Terrain Position. When antiarmor units are employed in urban terrain, the same considerations for position selection as previously mentioned apply. (See FM 5-103 and FM 90-10-1 for additional information.)

(1) There are other considerations that apply if the TOW is to be positioned in a building. The TOW should be fired from a building only when--

- The building is sturdy.
- The ceiling is at least 2 meters (7 feet) high.
- The room is at least 5 by 8 meters (17 by 24 feet) or larger.
- There are 2 square meters (20 square feet) of ventilation to the rear of the system (an open door 2 by 1 meter [7 by 3 feet] provides that much ventilation).
- Glass is removed from all windows and doors, and furniture and other objects that could be blown around are removed from the room.
- Everyone in the room wears earplugs and is positioned forward of the rear end of the launch tube.

(2) Urban terrain affords the TOW squad improved conditions to maximize cover and concealment, but firing limitations must be considered.

### **3-20. MOVEMENT BETWEEN FIRING POSITIONS**

The Threat considers ATGMs (TOWs) to be critical targets. He will be expecting TOW fires and will react immediately to suppress it. Because of this, TOW squads must be prepared to move to their alternate positions. The decision for a squad to move to an alternate position is normally made by the section leader. Although in some instances, the platoon leader may reserve the authority to approve the squad leader's request to move. The platoon leader must coordinate the movement of his sections and squads so that all of the weapons are not moving at once. At least one squad must be in position to cover the assigned sector while the other squads move.

### 3-21. ROUTES BETWEEN POSITIONS

- a. The squad leader must personally reconnoiter all routes to alternate and supplementary positions. If necessary, routes are improved to ensure ease of use.
- b. The routes into, out of, and between positions should offer cover and concealment and, in so far as possible, should avoid areas where the vehicles may raise dust. Routes should allow the squad to enter the firing position opposite the location of the enemy.
- c. When moving between positions, the platoon leader normally moves with one section, and the platoon sergeant with the other. Dispersion between vehicles and normal security measures are enforced.

### 3-22. GROUND CLEARANCE

- a. There are two clearance requirements to ensure that a missile will not hit the ground before reaching a target.
  - (1) There should be at least 9 inches of muzzle clearance around the end of the launch tube to ensure that the wings and control surfaces do not hit anything when they extend after the missile clears the launch tube. If the wings are damaged or if they catch on an object, the missile will fly erratically or go to the ground.
  - (2) There should be at least 30 inches of clearance between a gunner's line of sight to a target and any obstruction that is between 500 and 900 meters from the firing position ([Figure 3-25](#)).

[Figure 3-25](#). Clearance requirements.

- b. If line-of-sight clearance is less than 30 inches, the probability of the missile hitting the ground or an obstruction is increased. [Figure 3-26](#) shows the probability of survival for the TOW. This is because a missile does not precisely follow a gunner's line of sight to the target.

[Figure 3-26](#). Probability of survival for the TOW.

## Section VI. BATTLEFIELD MOVEMENT

The movement of units on the battlefield is an essential part of all combat operations. Tactical movements are conducted using techniques consistent with the requirement for speed, enemy situation, terrain, and visibility. Tactical discusses moving the TOW by helicopter. Tactical road marches, a form of tactical movement, are conducted in division and corps rear areas to rapidly relocate units when the probability of enemy contact is remote and security requirements are minimal. Planning and conduct of tactical road marches are covered in FM 7-20. This section discusses how antiarmor platoons move on the battlefield when enemy contact is likely and security is required. It includes a discussion of maneuver once enemy contact is made.

### 3-23. MOVEMENT FUNDAMENTALS

Whether moving when not in contact or after enemy contact is made, the platoon must minimize exposure to observation and fires. Skillful use of terrain, avoidance of possible kill zones, and use of measures to counter enemy observation and fires are basic to effective movement.

a. Use Terrain for Protection. Terrain offers cover and concealment from observation and fires. Moving platoons must make maximum use of cover and concealment to accomplish the mission. Terrain-driving techniques can help units take advantage of the terrain over which they must move; examples are--

- Use cover and concealment.
- Avoid skylining.
- Do not move directly forward from a defilade firing position.
- Cross open areas quickly.

b. Avoid Possible Kill Zones. Avoid large, open areas, especially those dominated by high ground or by terrain that affords the cover and concealment. These are likely enemy kill zones. The enemy will attempt to incorporate those areas into his defensive scheme of action to capitalize on the long-range fields of fire of his ATGMs and other direct-fire weapons. If likely kill zones must be crossed, they must be crossed rapidly. Countermeasures are used to suppress likely and suspected enemy positions.

c. Use Countermeasures. Common countermeasures are suppressive fire, smoke, and camouflage.

(1) Suppressive fire. Suppressive fire can be provided by direct-fire or indirect-fire weapons systems. Suppressive fire is used to degrade the enemy's ability to acquire and engage targets and may cause enemy casualties. Direct-fire weapons systems are inherently more accurate, lethal, and responsive than indirect-fire systems. Indirect-fire weapons systems are generally more effective for suppression than direct-fire systems. This is because they can engage targets behind masking terrain (high-angle fire), and because they have greater range and more effective munitions (dual-purpose improved conventional munition [DPICM], smoke, high-explosive [HE]).

(2) Smoke. Smoke to aid movement may be delivered by artillery, or by the maneuver battalion's organic mortars, smoke pots, smoke generators, or vehicle-mounted launchers. Smoke is used to obscure the enemy's vision or to screen the friendly force. Smoke to obscure is used on known enemy positions. It degrades the enemy's vision within and beyond his location. With thermal sights, the platoon may still engage identified point targets through this smoke. Smoke to screen is employed on the friendly force or between it and the enemy. It is also used to degrade enemy ground and aerial observation and point fires.

(3) Camouflage. Properly selected and applied, camouflage blends vehicles and troops naturally with the surrounding area. It complicates the enemy's target detection effort, especially from long ranges. Because of the wide use of night vision aids, camouflage is equally important at night. Camouflage will not, however, totally guard against detection by thermal imagery devices.

### **3-24. MOVEMENT WHEN NOT IN CONTACT**

a. Maneuver companies and battalions move on the battlefield using the movement techniques of traveling, traveling overwatch, and bounding overwatch. These techniques are selected based on expected enemy contact ([Figure 3-27](#)). Traveling provides for the greatest speed. Bounding overwatch provides the highest readiness before contact. All three movement techniques allow the moving unit to make initial contact with its smallest force. The unit commander determines the



technique to use based on his expectation of enemy contact, the requirement for speed (based on mission and time available), and the terrain and visibility. In each of the three movement techniques, the antiarmor unit leader uses a combination of checkpoints, phase lines, and time limits, to trigger the movement of his antiarmor elements.

[Figure 3-27.](#) Selection of movement techniques.

b. Because of their vulnerability while moving (limited armor protection and no capability to fire the TOW on the move), TOW platoons do not lead. In any of the three movement techniques, antiarmor platoons are best used when positioned to perform as the overwatch element. This reduces the chance that an antiarmor platoon will make initial enemy contact. Because of this, an antiarmor platoon gears its movement to provide continuous coverage for the supported unit rather than covering its own movement. Whether supporting a mounted or a dismounted force, the antiarmor platoon leaders must anticipate how they can best support the move considering the terrain and the movement technique the unit is using.

(1) Traveling. The traveling technique ([Figure 3-28](#)) is used when enemy contact is not likely. Lead and trail elements of a unit using the traveling technique move at the same time, but are dispersed for security. A traveling unit organizes to facilitate a rapid transition to a more secure movement technique (traveling overwatch or bounding overwatch) or maneuver, in case of unexpected enemy contact. The location of an antiarmor platoon in a battalion using the traveling technique and the command relationships established are based on the commander's knowledge of the enemy, the terrain, and his plan of action once contact is made.

[Figure 3-28.](#) Traveling.

(a) If the battalion commander anticipates contact with an armor threat before he reaches his objective, and terrain and visibility allow for use of the TOW, one or more antiarmor sections or an antiarmor platoon may be attached or placed under OPCON of the lead company. This provides the lead company with a dedicated antiarmor element in overwatch.

(b) Companies using traveling overwatch normally move in a column. Platoons are staggered laterally with 50 to 100 meters between vehicles (mounted) or 20 to 50 meters between platoons (dismounted). Trail platoons may move on parallel routes to shorten the column and reaction time. These distances may be increased or decreased, depending on the terrain and visibility.

(c) Remaining antiarmor sections or platoons may be dispersed among the trailing elements of the battalion or they may move as a single element within the battalion column. By retaining the antiarmor company (minus) or platoon (minus) under his control, the battalion commander has an antiarmor force with which to respond to unforeseen events.

(2) Traveling overwatch. The traveling overwatch technique is used when enemy contact is possible, thus greater readiness is needed but speed is still important. To achieve this readiness, the distance between lead and following elements is increased. This distance is not fixed. The elements following stay far enough behind to avoid fire directed at the lead elements, yet close enough to provide support by maneuver if the lead element makes contact. In this movement technique, the lead elements continue to move and the trail element follows

with occasional stops to overwatch movement of the lead element. Considerations for antiarmor platoons moving with companies and battalions using traveling overwatch are similar to those for traveling except that the probability of enemy contact is greater.

(a) An antiarmor section or platoon moving with the lead company in a battalion, using the traveling overwatch technique, regulates its movement in relation to the movement of the lead platoon. This provides continuous overwatch on likely enemy positions and armor avenues of approach. Speed will vary and antiarmor sections may occasionally halt in firing positions. Because of the range of the TOW, the antiarmor elements need not immediately follow the lead platoon. Another infantry or tank platoon may be closer to the lead platoon and can provide overwatch fires on any enemy that may appear at closer ranges.

(b) If there are suitable fields of fire, an antiarmor platoon moving with an infantry company in traveling overwatch may move forward by bounds ([Figure 3-29](#)). In such cases, antiarmor sections bound forward alternately to provide overwatch, taking care not to move so far forward that they can be suppressed by enemy fires directed at the lead platoon. This technique for continuous overwatch is relatively easy to perform for antiarmor platoons that are moving with dismounted infantry over traversable terrain. At faster speeds, with mechanized infantry overwatching, antiarmor elements normally move continuously and occupy firing positions as the situation permits. If elements within the lead company are not bounding, antiarmor elements generally will not bound either.

[Figure 3-29](#). Traveling overwatch.

(c) In situations where fields of fire are not suitable for TOW, antiarmor elements move with trailing platoons. Antiarmor elements moving with trail companies may move as in traveling. They may also be assigned to overwatch avenues of approach that lead into the flanks or rear of the moving battalion. The battalion commander may retain control of a portion of his antiarmor unit, so he can rapidly shift it to particular threats anticipated or encountered during the move.

(3) Bounding overwatch. This technique is used when enemy contact is expected. It is the most secure but the slowest of the movement techniques. Part of the moving force, the overwatch element, occupies a covered and concealed position that affords good observation and good fields of fire in the direction of the expected enemy. Another part, the bounding element, covered by the overwatch element, moves forward to a selected position. It secures the position and becomes the overwatch element so that the previous overwatch element becomes the bounding element. The bounding element is careful not to move beyond the range of the weapons in the overwatch element. It also takes care not to mask the fires of the overwatch element.

(a) This technique may be used by all battalion units. A moving battalion may bound with its lead company and move following companies using the traveling overwatch technique or it may use one or more companies to overwatch the movement of the lead company. Overwatch by trail companies may allow the lead company to move continuously and faster using the traveling overwatch technique. The terrain and visibility, knowledge of the expected enemy, and the requirement for speed will determine how this technique is employed. As with previously discussed movement

techniques, antiarmor platoons may execute bounding overwatch under battalion control, or attached or under OPCON of an infantry company. The antiarmor element is best employed as part of the overwatch.

(b) The infantry company normally executes bounding overwatch by leading with a single platoon and overwatching with the remainder of the company if terrain and visibility permit. The overwatching platoon(s) with the antiarmor element are positioned to provide immediate supporting fire if the bounding element makes contact. The antiarmor platoon orients on suspected enemy locations and avenues of approach. They do not orient on the bounding element. Other direct-fire weapons orient on likely or suspected enemy locations at closer ranges. Indirect-fire weapons are prepared to deliver suppressive fires on planned targets or in response to requests for immediate suppression on unplanned targets. [Figure 3-30](#) shows bounding overwatch within a moving infantry company.

(c) An important consideration when establishing the overwatch is that the TOW is not a suppressive or volume fire weapon. It does, however, provide long-range, accurate fire on point targets and complements a mix of other direct-fire and indirect-fire weapons in the overwatch role. Specific tasks for the overwatch element are--

- Place fires on suspected enemy positions that could engage the bounding element out to and beyond the next overwatch position.
- Maneuver in support of the bounding force.
- Call for and adjust indirect fires.
- Maintain direct communication with the bounding force.

[Figure 3-30](#). Bounding overwatch.

(d) Since a company conducting bounding overwatch expects to make contact on each bound, the commander must ensure that leaders of both overwatching and bounding elements understand what is to be done before each bound begins. Checkpoints, phase lines, other control measures, and SOPs are used to reduce the length of orders and use of the radio. The commander's instructions include--

- Location of or direction to the enemy.
- Size and type of enemy force (if known).
- Position of the overwatch element.
- Location of the next overwatch position.
- Route to be used by the bounding element.
- What the bounding element will do when it arrives at the next overwatch position.
- Actions on contact.
- How and where the next order will be given.

### 3-25. MANEUVER

a. Once enemy contact is made and fires are initiated, tactical movement becomes maneuver.

Maneuver is the employment of forces through movement, supported by fire to achieve a position of advantage from which to destroy the enemy. It is an immediate change from and an extension of the movement techniques described earlier.

b. Maneuver involves the actions of two elements: a base-of-fire and a moving element ([Figure 3-31](#)). The base-of-fire element covers the moving force by firing at the enemy. The moving force moves forward to close with the enemy or to reach a better position from which to fire. Depending on the distance to the enemy and the amount of cover and concealment available, the base-of-fire element and the moving force may switch roles, as needed, to continue maneuvering. Before the moving force advances beyond the supporting range of the base-of-fire element, it takes a position from which it can fire on the enemy, and allows the base-of-fire element to move. Maneuver can be conducted mounted or dismounted and at any organizational level.

[Figure 3-31](#). Maneuver.

c. Antiarmor platoons participate in maneuver with companies and battalions. They may be part of the base-of-fire or the moving element. When part of the moving element, the antiarmor platoon moves to gain better firing positions. It does so under the protection of leading infantry or tanks. Antiarmor sections and platoons add their fires to the assault, but they do not close with the enemy--antiarmor elements are not assault units.

d. As part of the base of fire, antiarmor elements engage long-range point targets, such as enemy tanks, that are in prepared positions. Tanks and other infantry direct-fire weapons engage point and area targets at closer ranges. These weapons, along with supporting indirect fires, add volume to the base of fire.

## Section VII. OFFENSIVE OPERATIONS

Antiarmor companies, platoons, and sections contribute to offensive operations by providing precise, long-range direct fires. This section discusses the techniques used by antiarmor platoons in the movement to contact, hasty attack, and deliberate attack. Techniques used in other offensive operations, such as exploitation and pursuit, are the same as those discussed here.

Offensive operations are conducted to carry the fight to the enemy and destroy, disrupt, or dislocate him. Such operations may be conducted to--

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

### 3-26. MOVEMENT TO CONTACT

a. In offensive operations, the movement to contact is conducted to make initial contact with the enemy or to regain lost contact. Because it is characterized by a lack of information about the enemy, movement is conducted using techniques that afford maximum security and provide flexibility. A movement to contact usually ends in a meeting engagement with the enemy (moving or stationary)

followed by either a hasty attack or a hasty defense.

b. The battalion conducts the movement to contact using either single or multiple columns ([Figure 3-32](#)). The commander organizes his force to ensure rapid and uninterrupted movement, and effective maneuver once enemy contact is made. The movement to contact is organized in virtually the same manner for both mechanized and light infantry forces. Antiarmor elements are usually with the lead company or in flank and rear security. They may also be dispersed throughout the column(s) of the moving force. Their placement and relationship to the maneuver companies depends on the commander's METT-T analysis as defined in his concept.

[Figure 3-32](#). Movement to contact.

c. There are two ways the antiarmor platoon can be used in a movement to contact. It can be part of the flank and rear security element, or it can provide overwatch to the lead company.

(1) Security.

(a) When moving, the battalion always ensures its flank and rear security. Security can be achieved by placing one or more platoons on the exposed flanks or rear of the battalion, depending on the size and composition of the expected threat. The addition of antiarmor sections to these security forces increases their capability against armor and motorized enemy forces. Flank and rear security forces in a movement to contact are normally given a screen mission. [Figure 3-33](#) shows a flank screen. [Figure 3-34](#) shows a rear screen.

[Figure 3-33](#). Flank screen.

[Figure 3-34](#). Rear screen.

(b) A screening force--

- Provides early warning of enemy approach.
- Destroys or repels small reconnaissance units.
- Maintains enemy contact, once made, and reports enemy activity.
- Impedes and harasses combat elements.

(c) The screening element establishes OPs along a screen line designated by the battalion commander. The screen line is shown as a line running parallel to the axis of advance for a flank screen and as a series of phase lines across the rear of the battalion for a rear screen. A screen line is established far enough from the battalion to prevent observation or direct fire. The screen is always established within range of organic or supporting indirect fires.

(d) Antiarmor sections are positioned with OPs covering the most threatening enemy armor avenues of approach. The OP's fields of observation and fire should capitalize on the TOW's capabilities. The addition of antiarmor elements increases the capability for good and limited visibility observation and long-range antitank fires.

(e) As with antiarmor elements in mechanized infantry, light infantry antiarmor platoons and sections enhance observation and antitank capabilities of screening light infantry.

(f) The mobility and responsiveness of light infantry screens can be vastly increased if Army aviation is used to move OPs. The use of helicopters for movement allows the occupation of OPs with infantry and antiarmor sections on terrain that would otherwise be difficult or impossible to reach by other means.

(2) Overwatch of the lead company.

(a) In a movement to contact, the lead company or company team operates ahead of the remainder of the battalion to develop the enemy situation, to facilitate uninterrupted movement, to prevent surprise, and to cover the main body if it is committed to action. The battalion scout platoon normally conducts reconnaissance forward and to the flanks of the lead company. The lead company organization varies with the situation and may include engineers, tanks, and antiarmor elements.

(b) The lead company team normally moves using traveling overwatch or bounding overwatch. The technique used may change several times during movement based on the requirement for speed and the possibility of enemy contact. The company team leads with tanks unless restrictive terrain (forests, built-up areas) dictates that infantry lead. Like movement techniques, the type of platoon leading may change frequently. The antiarmor platoon provides long-range antiarmor overwatch for the leading platoon(s). It gears its movement to provide continuous coverage of leading tanks and infantry.

(c) When the lead company team is using traveling overwatch ([Figure 3-35](#)), the antiarmor platoon may move continuously, or it may bound by section to successive overwatch positions. The method used depends on the rate of movement of the lead platoons and the availability of suitable overwatch positions. The overwatch positions selected are oriented on the axis of advance of the lead platoons.

[Figure 3-35](#). Lead company team traveling overwatch.

(d) When the lead team is bounding by platoons ([Figure 3-36](#)), the company team commander controls overwatching and bounding platoons, since he is expecting to make enemy contact. He selects or approves the location to which the leading platoon will bound and the route to be taken. He relays this information to the overwatching antiarmor platoon. He points out to the antiarmor platoon leader areas of concern from which the enemy could engage his bounding platoon with antitank fires. He also points out the general location of the antiarmor platoon's next overwatch position. Subsequent antiarmor platoon overwatch positions are never forward of the leading tank or infantry platoon.

[Figure 3-36](#). Lead company team bounding.

(e) During bounding movement, overwatching antiarmor elements constantly scan locations from which enemy gunners could engage the moving force. Detected enemy armor or antitank weapons are engaged immediately even though they may not yet have fired on friendly elements. Enemy forces not presenting an immediate threat to the bounding element are reported to the company team commander for engagement by other weapons.

(f) In light infantry, the lead company moving to contact employs similar techniques. However, antiarmor elements overwatching the lead platoons of a light infantry force may remain farther to the rear than in mechanized infantry, because of slower rates of movement and less dispersion between lead elements. The battalion commander may choose to centrally control the long-range antiarmor overwatch and not task-organize antiarmor sections or an antiarmor platoon to the lead company.

### 3-27. ATTACK

There are two types of attack in the offense--hasty attack and deliberate attack.

#### a. Hasty Attack.

(1) A hasty attack is conducted to exploit an enemy weakness or vulnerability. Hasty attacks can occur following contact with the enemy in a movement to contact. They may also be used to capitalize on the initiative following a successful defense or a deliberate attack. Speed, precision, and violence in execution is based on well-rehearsed battle drills and quick decisions rather than detailed planning and knowledge of the enemy. Antiarmor platoons participate in hasty attacks attached or under OPCON of a company or company team, or under the control of the battalion or task force commander.

(2) The antiarmor platoons are normally part of the base of fire. The base of fire contains a mix of weapons systems with typically one or more tank or infantry platoons, an antiarmor platoon or section(s), and supporting indirect fires. The base-of-fire weapons place direct and indirect fires on the enemy force while the moving elements maneuver. The base of fire destroys or suppresses weapons through the volume and accuracy of its fires.

(3) Because of their limited basic load and slow rate of fire, TOW systems do not provide volume fires. They do provide long-range, accurate fires on enemy vehicles, protected antitank guns and ATGMs, and other priority hard targets. TOW systems, when used as part of the base of fire, are located separately from tanks and, when possible, in depth to increase their survivability. Infantry and tank platoons may alternately move to close with the enemy or add their fires to the base of fire. Antiarmor platoons do not close with the enemy; they provide close support fires. They move only to improve their survivability and ability to support the attack. As the attacking platoons close with the enemy position, the antiarmor platoons shift their fires to engage withdrawing tanks or other armored vehicles, or to cover likely avenues of reinforcement. When the objective has been cleared, antiarmor platoons move forward to support a continuation of the attack, to join in the consolidation of the objective, or to prepare for any counterattack.

(4) The antiarmor platoon is best used to provide the commander with flexibility during the hasty attack. The antiarmor platoon can be employed within the base of fire to free tanks and infantry to close with the enemy. It can also be employed to--

- Protect exposed flanks of battalion elements moving to close with the enemy.
- Help block a potential or developing enemy attack against the battalion.
- Help isolate the objective by engaging enemy armor on adjacent positions.

b. Deliberate Attack. Antiarmor platoons support the deliberate attack in much the same way as they support the hasty attack. The difference between the hasty and deliberate attack is that the deliberate

attack follows detailed planning and preparation. This is accompanied by extensive reconnaissance to develop intelligence. Based on this planning and preparation, antiarmor element leaders are better able to select firing positions and routes to support the scheme of maneuver from the line of departure (LD) to the objective. Routes and firing positions are reconnoitered as far forward as the enemy situation permits.

## **Section VIII. DEFENSIVE OPERATIONS**

The purpose of the defense is to defeat the enemy and regain the initiative. Antiarmor platoons contribute to success in the defense by employing long-range fires to destroy attacking enemy armor. The defense is used to cause an enemy attack to fail, to gain time, to concentrate forces elsewhere, to control essential terrain, and to wear down the enemy forces before attacking them. This section focuses on the employment of antiarmor units in the main battle area (MBA). The techniques discussed apply equally to each of the five complementary elements.

### **3-28. BATTLEFIELD ORGANIZATION**

The defensive battlefield is organized into five complementary elements as follows:

- a. Deep operations in the area forward of the forward line of own troops (FLOT).
- b. Security force operations forward and to the flanks of the defending force.
- c. Defensive operations in the MBA.
- d. Rear operations to retain freedom of action in the rear area.
- e. Reserve operations in support of the main defensive effort.

### **3-29. ANTIARMOR SUPPORT IN THE DEFENSE**

a. Antiarmor platoons add long-range precision fires to the defense as part of the security force, within the MBA, and as support for counterattacking forces. Antiarmor sections and platoons may also be used to reinforce a unit when given the mission of preparing and defending a strongpoint. The following paragraphs discuss how antiarmor platoons support the defense.

#### (1) Security force.

(a) Defending battalions deploy security forces forward of the forward edge of the battle area (FEBA) to--

- Provide early warning.
- Deny enemy observation of the MBA.
- Assist rearward passage of a covering force if deployed.
- Deceive and disorganize the enemy.

(b) The security force is positioned to cover enemy avenues of approach into the defensive sector by occupying OPs on suitable terrain across the battalion front. Antiarmor platoons are positioned with OPs that have long-range fields of fire on high-speed avenues of approach.



(c) As the enemy approaches, the antiarmor platoons capitalize on their standoff and engage armor at maximum range. Supporting field artillery and mortars at the same time engage with indirect fires to disrupt enemy formations and force crews to button up. These concerted fires degrade the enemy's ability to acquire targets. They also help reduce pressure on any covering force elements remaining in contact, thus facilitating their passage to the rear. As the enemy closes, the security force withdraws by alternate or successive bounds to subsequent positions and continues to engage. The security force may keep up this process through the FEBA and into the battalion defensive area to further deceive the enemy as to the defensive scheme. It may disengage under covering fires from the battalion and move to positions in depth; or, it may assume another role within the battalion defense.

(2) Main battle area.

(a) Within the MBA, the battalion commander organizes and positions his force based on his analysis of METT-T. He may use any combination of defensive techniques. Antiarmor platoons and sections may be attached to defending companies, or they may be retained under battalion control.

(b) Antiarmor platoons and sections are positioned to cover avenues of approach that afford long-range fields of fire. Tanks are employed where fields of fire are shorter and more restricted. Antiarmor elements are best positioned where they can take advantage of their standoff range (except ATGMs). To achieve this standoff and to mass fires with tanks and other antitank systems in a particular engagement area, antiarmor platoons are positioned in depth ([Figure 3-37](#)) or on the flanks of other defending units. When this is done, consideration must be given to positioning infantry near the TOW systems for security against ground attack.

[Figure 3-37.](#) Massing of fires using in-depth positions.

(c) Skillful integration of fires and obstacles prevents the enemy from easily engaging friendly antiarmor systems and slows and canalizes the enemy's advance. This increases engagement time for TOWs and increases the probability of achieving a target hit.

(d) When terrain or other conditions dictate that antiarmor elements locate with tanks or infantry ([Figure 3-38](#)), positions are selected to capitalize on each system's range capability as much as possible.

[Figure 3-38.](#) Massing of fires from a single position.

(e) Whether located with tanks and infantry or separately, antiarmor elements always select multiple firing positions to cover primary and secondary sectors of fire. Clearing antiarmor fields of fire must be a priority task for engineers in preparing defensive positions. When standoff exists, TOW squads may engage two or more targets before changing firing positions. When ranges are 2,000 meters or less, TOW squads should be displaced to regain standoff or they should change positions after each engagement.

(f) The control and order of displacement of antiarmor elements is a special consideration. The vulnerabilities of ITVs and wheeled vehicle-mounted TOW systems can be minimized if displacement is planned and controlled. Factors affecting

displacement are--

- Commander's intent.
- Closing speed of the enemy.
- Obstacles affecting enemy movement.
- Distance to subsequent positions.
- Covered and concealed routes to subsequent positions.
- Availability of armor and infantry overwatch elements.
- Visibility.

(g) In daylight, the order of displacement is usually TOW systems, infantry, and tanks. During limited visibility, tanks may displace before infantry, but antiarmor elements are normally displaced first. Thorough reconnaissance of routes and subsequent positions is conducted to reduce confusion and movement time.

(h) In limited visibility conditions, antiarmor elements not equipped with thermal nightsights may be required to move their positions closer to engagement areas to compensate for reduced effective ranges. Another technique is to select initial defensive positions based on the worst visibility conditions expected, thereby reducing the requirement to reposition. The TOW nightsight enables the gunner to engage targets during degraded visibility conditions. However, target engagement distances can be severely reduced by such factors.

(i) In most cases, TOW systems are employed mounted. This permits rapid movement and minimizes their vulnerability to enemy direct and indirect fires. There are cases, though, such as defending in a built-up area or in mountainous terrain, when it may be advantageous to employ some systems dismounted. If possible, vehicles are used to transport the TOW system to its firing position and to resupply ammunition.

(3) Counterattack. Counterattacks are conducted to disrupt and destroy an attacking force. Antiarmor units participate in the counterattack as in the hasty or deliberate attack.

b. When the antiarmor platoon is used in the security force, the platoon as a whole, or some of its sections, are normally attached or placed under OPCON of the security force commander. Upon return to the MBA, the preferred method is to use the TOWs in mass, under the control of the platoon leader.

## **Section IX. RETROGRADE OPERATIONS**

There are three types of retrograde operations: delay, withdrawal, and retirement. When faced with 3 tank and motorized threat, antiarmor elements greatly increase the battalion's capability to conduct the delay or the withdrawal. Because it involves the movement of forces not in contact away from the enemy, retirement will not be discussed in detail here. (For more information on retirement operations, see FM 7-20.)

Retrograde operations are organized movements to the rear or away from the enemy. They may be voluntary or forced by enemy action. Retrograde operations preserve the integrity of the force until the offense can be resumed. They may be conducted specifically to--

- Permit the concentration of forces elsewhere.
- Avoid combat under unfavorable conditions.
- Gain time.
- Shorten lines of communication and supply.
- Harass, exhaust, and delay the enemy.
- Draw the enemy into an unfavorable position.

### 3-30. DELAY

#### a. Concept.

(1) A delay is an operation in which space is traded for time. The delay differs from the defense in that delaying units are usually not required to become decisively engaged, to hold terrain, or to destroy the enemy force. An exception is when the delaying force is told to hold the enemy forward of a specified line for a given time, or until the occurrence of a particular event. In this case, the delaying force is expected to become decisively engaged, if necessary, to achieve the required delay. The battalion may be given a delay mission when--

- Employed as part of a covering force.
- Employed in a wider-than-normal sector to allow the concentration of forces elsewhere (economy of force).

(2) The concept of the delay is to fight the enemy with enough force to cause him to expend time to deploy and maneuver to close with the delaying force. Each delay position is defended until the enemy's actions threaten decisive engagement. The delaying force then disengages, moves to a subsequent position, and repeats the process. Counterattacks are used to gain additional time or to free units that may have become decisively engaged. The major tasks that the delaying battalion commander must accomplish are as follows:

- Provide the required time.
- Destroy as much of the enemy force as possible.
- Cause the enemy to deploy and conduct successive attacks.
- Preserve freedom of maneuver.
- Preserve the force.

(3) The ability of the infantry battalion to accomplish those tasks is significantly increased when it is reinforced with additional antiarmor units, such as a separate antiarmor company, and when it is supported by attack helicopters, field artillery, and engineers.

(4) The battalion commander establishes control measures to control the delay. Commonly used control measures are sectors, delay positions or delay lines (phase lines), and contact points. The battalion's boundaries, period of delay, and, generally, its initial delay line is established by higher headquarters. To prevent exposed flanks and gaps, and to ensure maximum delay, the battalion commander carefully orchestrates when subordinate units move to subsequent delay lines or positions.

(5) Depending on the width of the assigned sector, the forces available, and information on the enemy, the battalion may delay on alternate or successive positions. In either case, it employs

a security force, and it may retain a reserve if the sector is narrow enough.

b. Employment of Antiarmor Platoons.

(1) Based on the commander's analysis of METT-T and, particularly, enemy avenues of approach, antiarmor platoons are allocated to the security force, the delaying companies, and the reserve. If enemy contact has not been made, a security force is usually employed forward of the initial delay position. This security force is organized and employed as discussed in [Section VII](#), except that frontages are usually wider and the mission is normally to screen.

Antiarmor sections and platoons are attached to those delaying companies or company teams that are covering primary armor avenues of approach with long-range fields of fire. Primary armor avenues of approach with restricted fields of fire are covered better by tanks. As required, antiarmor elements or tanks reinforce companies covering secondary avenues of approach. The battalion antiarmor company or an attached company from a separate antiarmor battalion may be cross-attached with infantry and tanks to create an additional delaying company.

(2) The battalion antiarmor element may also provide the nucleus for a mobile reserve. This reserve may be used to reinforce the fires of forward elements, assist the disengagement, cover the repositioning of forward elements, and provide depth along the most threatening avenues of approach.

c. Types.

(1) Delay on successive positions.

(a) The delay on successive positions commits all companies or company teams on each tier of the battalion's delay positions (each delay line) ([Figure 3-39](#)). It is the most common type of delay. It is used when there are insufficient forces to occupy more than one tier of positions. When the initial delay position is occupied before enemy contact is made, security forces are employed forward. Those security forces initiate the delay with long-range antitank fires and artillery. As the security force is pushed back, the enemy is taken under fire at maximum range by antiarmor elements in the initial delay positions and by indirect fires. Antiarmor elements maximize standoff and inflict as much damage as possible, forcing the enemy to slow and to deploy.

(b) As the enemy closes with the delaying force, tanks and other antiarmor weapons add their fires. Fire control techniques explained in [Section IV](#) are used. When ordered to move, the unit disengages, moves, and occupies the next position. In daylight, the order of movement is normally antiarmor, infantry, and then tanks. At night, tanks may move before infantry. The antiarmor elements move first because of their vulnerability to direct and indirect fires, and because of their mobility disadvantage when compared to tanks and other armored vehicles. By moving first, the antiarmor elements are also able to set up and overwatch the movement of tanks and infantry.

[Figure 3-39](#). Delay on successive positions.

(2) Delay on alternate positions.

(a) When the battalion sector is narrow and sufficient forces are available, the battalion may occupy two tiers of delay positions at a time ([Figure 3-40](#)). One or more companies

occupy the initial positions. Other companies occupy and improve the subsequent position.

(b) As in the delay on successive positions, the security force initiates the delay and then passes the fight to elements on the initial delay position. When ordered to do so, units on the initial delay position disengage and move through, or preferably around, the second position and occupy the third tier of positions. Responsibility for delaying the enemy is assumed by the units on the second position when units from the first position move through or around them. This delaying procedure is then repeated. Units on rearward positions assist disengagement and overwatch the movement of units from forward positions. The order of disengagement and movement is the same as for the delay on successive positions.

[Figure 3-40.](#) Delay on alternate positions.

### 3-31. WITHDRAWAL

#### a. Concept.

(1) Withdrawal is an operation in which all or part of a force frees itself from contact with the enemy to perform a new mission. Preferably, the withdrawal is not conducted while under heavy enemy pressure. Withdrawing units try to deceive the enemy by moving with as much secrecy as possible. When under enemy pressure, withdrawing units initially conduct a delay to gain a mobility advantage and to free nonessential combat, CS, and CSS units. Some elements remain in contact to deceive the enemy and protect the withdrawal of other units. These forces left in contact are referred to as detachments left in contact (DLIC). A battalion DLIC is normally commanded by the battalion executive officer. It may be composed of portions of each committed company team under control of the company executive officer, or it may consist of one or more companies or teams. The size and composition of the DLIC depends on--

- Width of the front.
- Forces available.
- Amount of enemy contact.
- Period of delay required.

(2) Ideally, the principal function of the DLIC is deception rather than combat; however, it must have combat power to stall the enemy until the withdrawal can be accomplished.

b. Employment of Antiarmor Units. Against an armored threat, antiarmor units are routinely used as part of the DLIC. Antiarmor elements are employed to enable massed fires to be placed on enemy high-speed avenues of approach. The organic antiarmor company or a separate antiarmor company reinforced with infantry may form the nucleus of the battalion DLIC. Tanks, if available, should also be included because of their greater protection, mobility, and firepower. Antiarmor sections, platoons, and companies fight as part of the DLIC the same as in the delay.

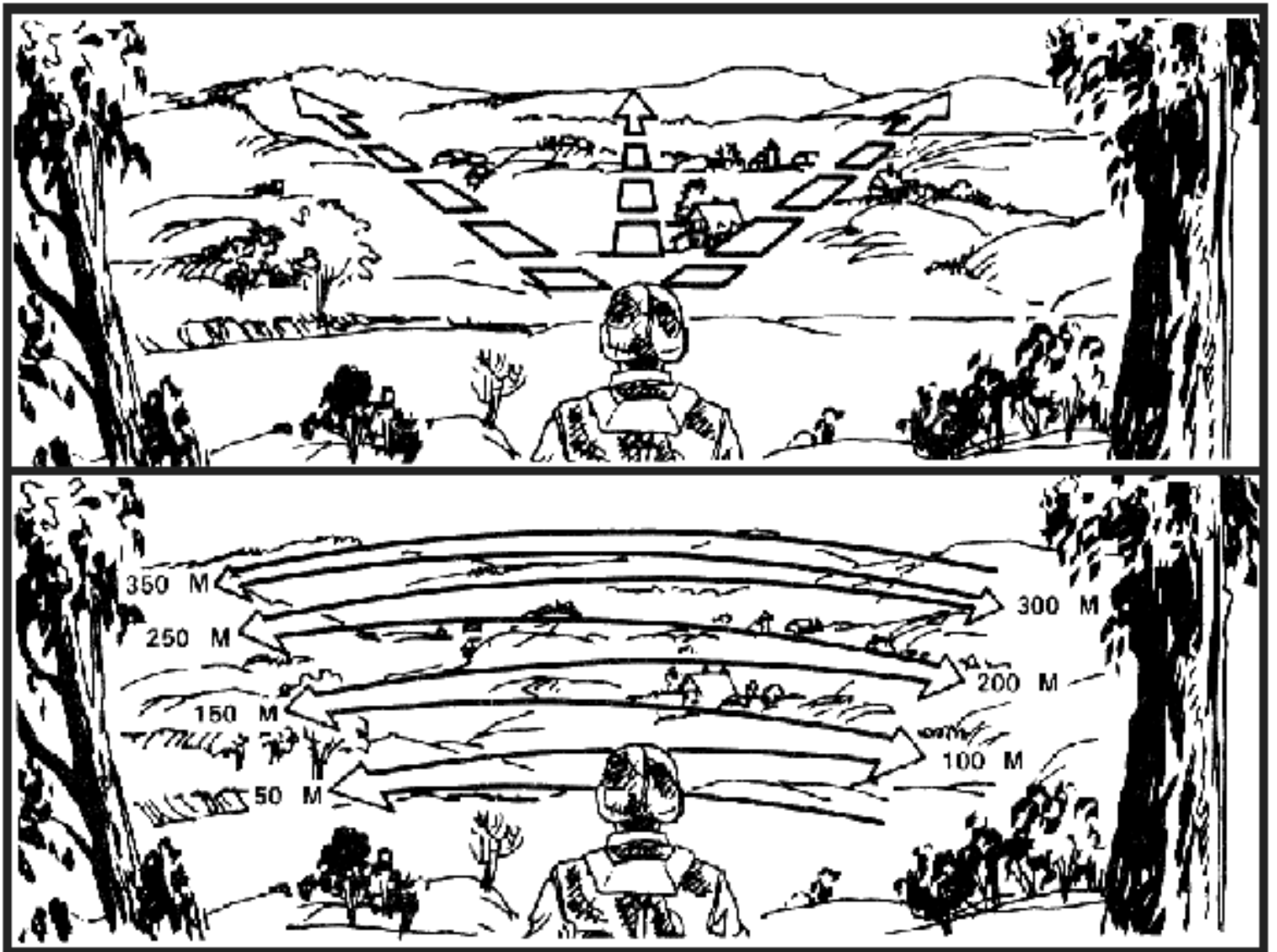


Figure 3-1. Scanning techniques.

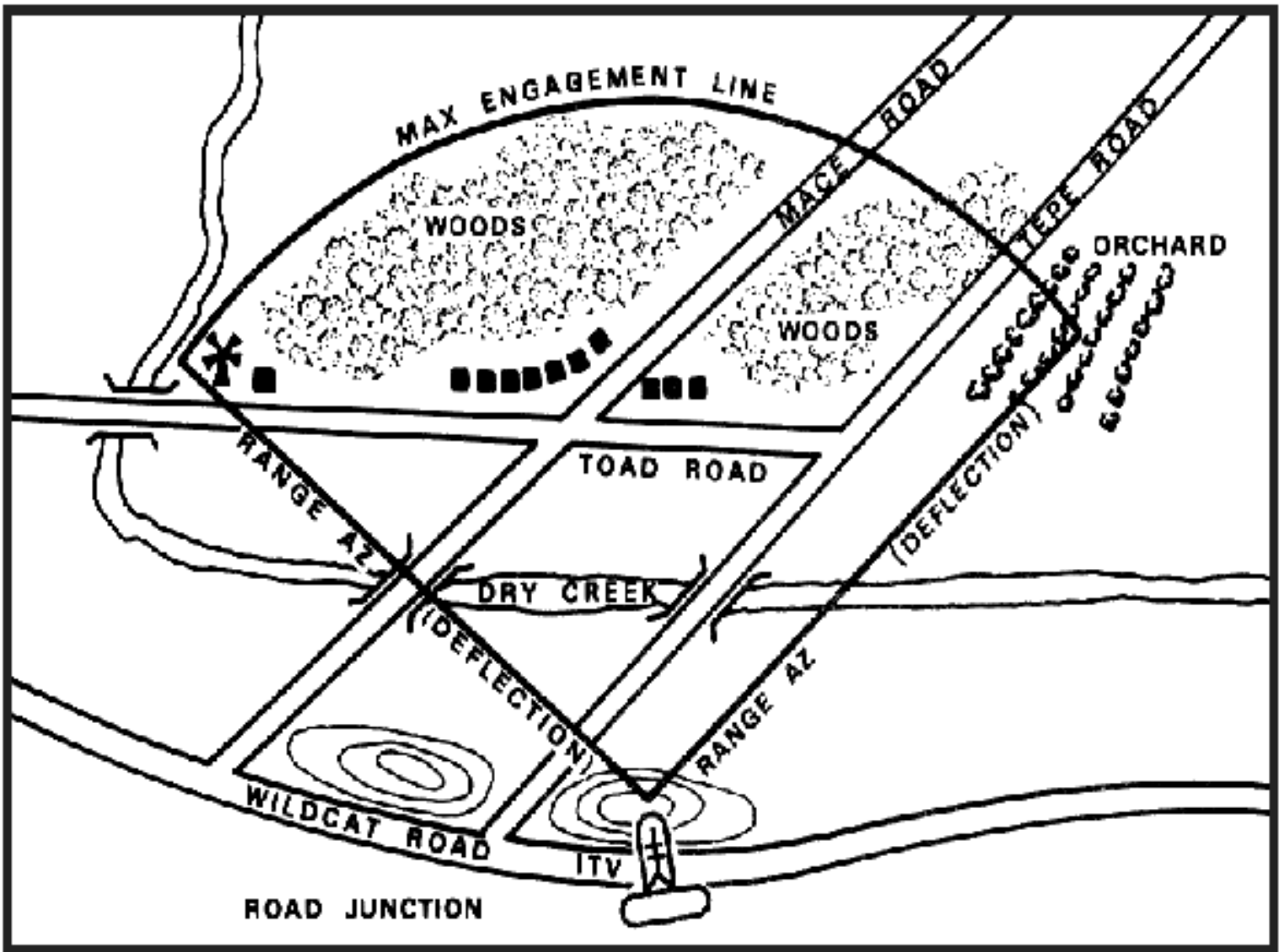


Figure 3-2. Maximum engagement line.

TARGETS	METERS	
	NAKED EYE	MAGNIFICATION 7-8 POWER
TANK CREW MEMBERS TROOPS, MACHINE GUN, MORTAR ANTITANK GUN, ANTITANK MISSILE LAUNCHERS	600	2,000
TANK, APC, TRUCK (by model)	1,000	4,000
TANK, HOWITZER, APC, TRUCK	1,500	5,000
ARMORED VEHICLE, WHEELED VEHICLE	2,000	6,000

Figure 3-3. Range determination recognition method.



SEEMS CLOSER	SEEMS FARTHER
<ul style="list-style-type: none"> <li>● BRIGHT CLEAR DAY</li> <li>● SUN IN FRONT OF TARGETS</li> <li>● HIGHER ELEVATIONS</li> <li>● LARGE TARGETS</li> <li>● BRIGHT COLORS (WHITE, RED, YELLOW) CONTRAST</li> <li>● LOOKING ACROSS RAVINES, HOLLOWES, RIVERS, DEPRESSIONS</li> <li>● AT SEA</li> </ul>	<ul style="list-style-type: none"> <li>● FOG, RAIN, HAZY TWILIGHT</li> <li>● SUN BEHIND TARGET</li> <li>● LOWER ELEVATIONS</li> <li>● SMALL TARGETS</li> <li>● DARK COLORS</li> <li>● CAMOUFLAGED TARGETS</li> </ul>

Figure 3-4. Conditions affecting range estimation.

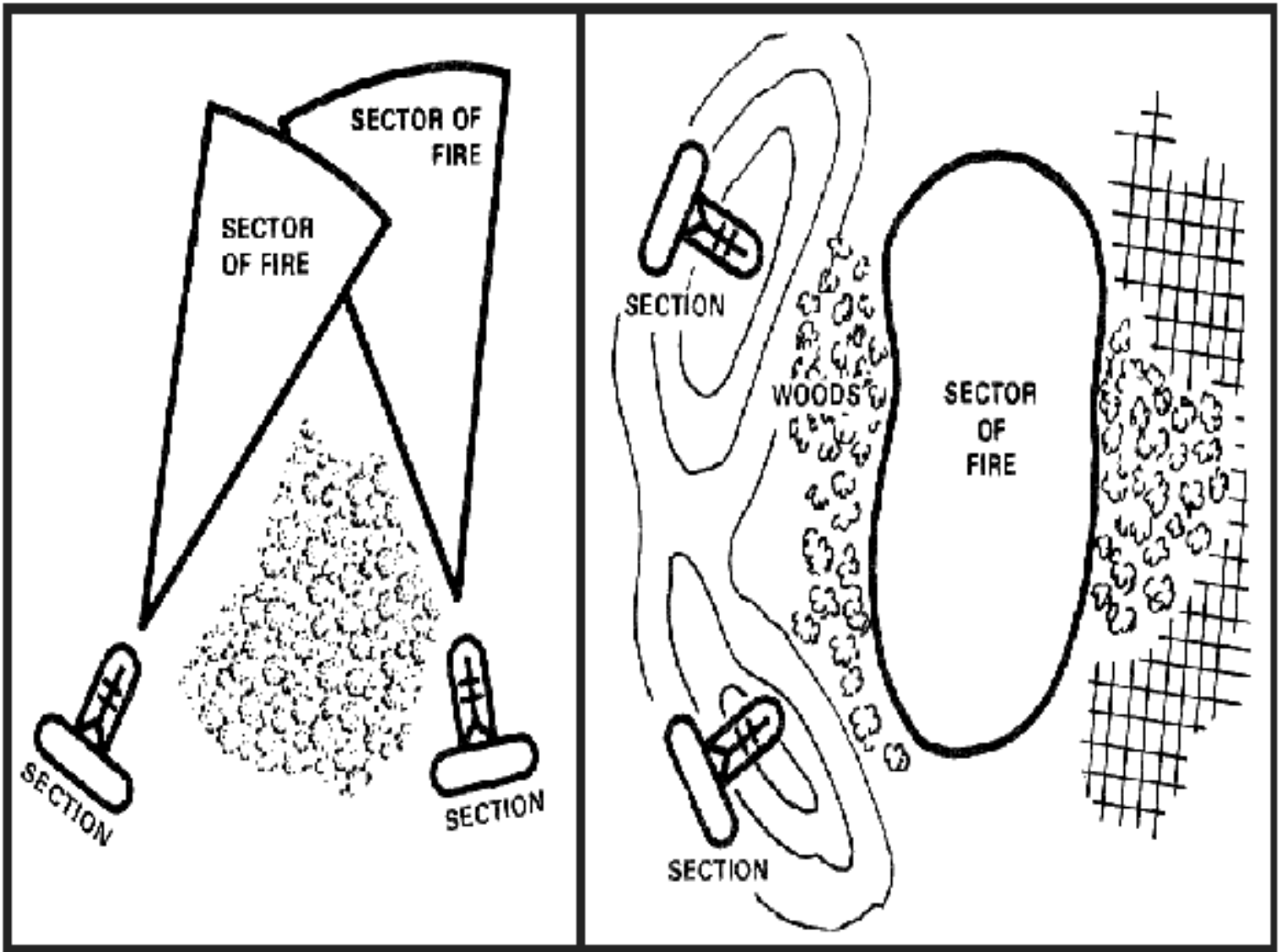


Figure 3-5. Sectors of fire.

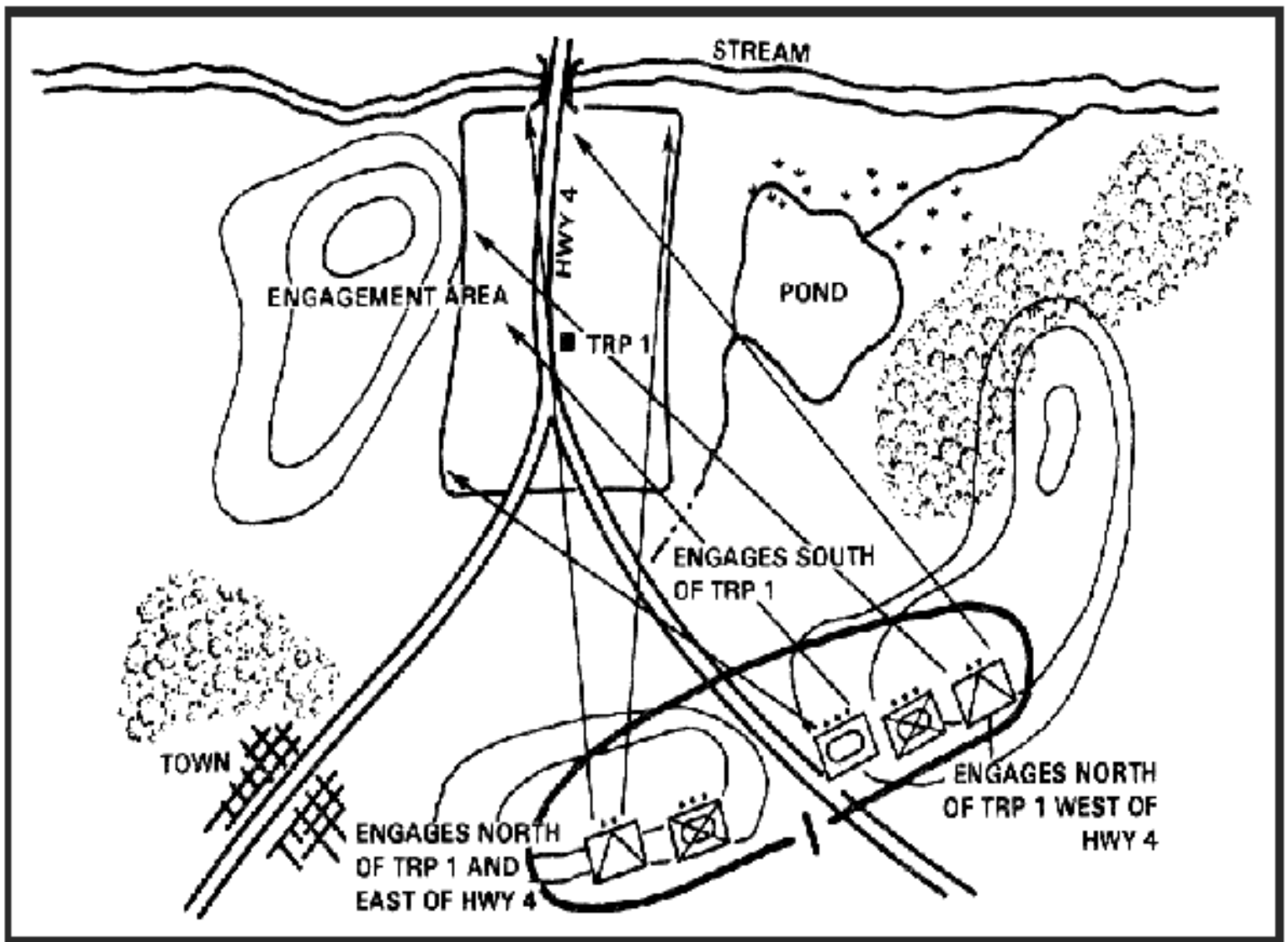


Figure 3-6. Engagement area.

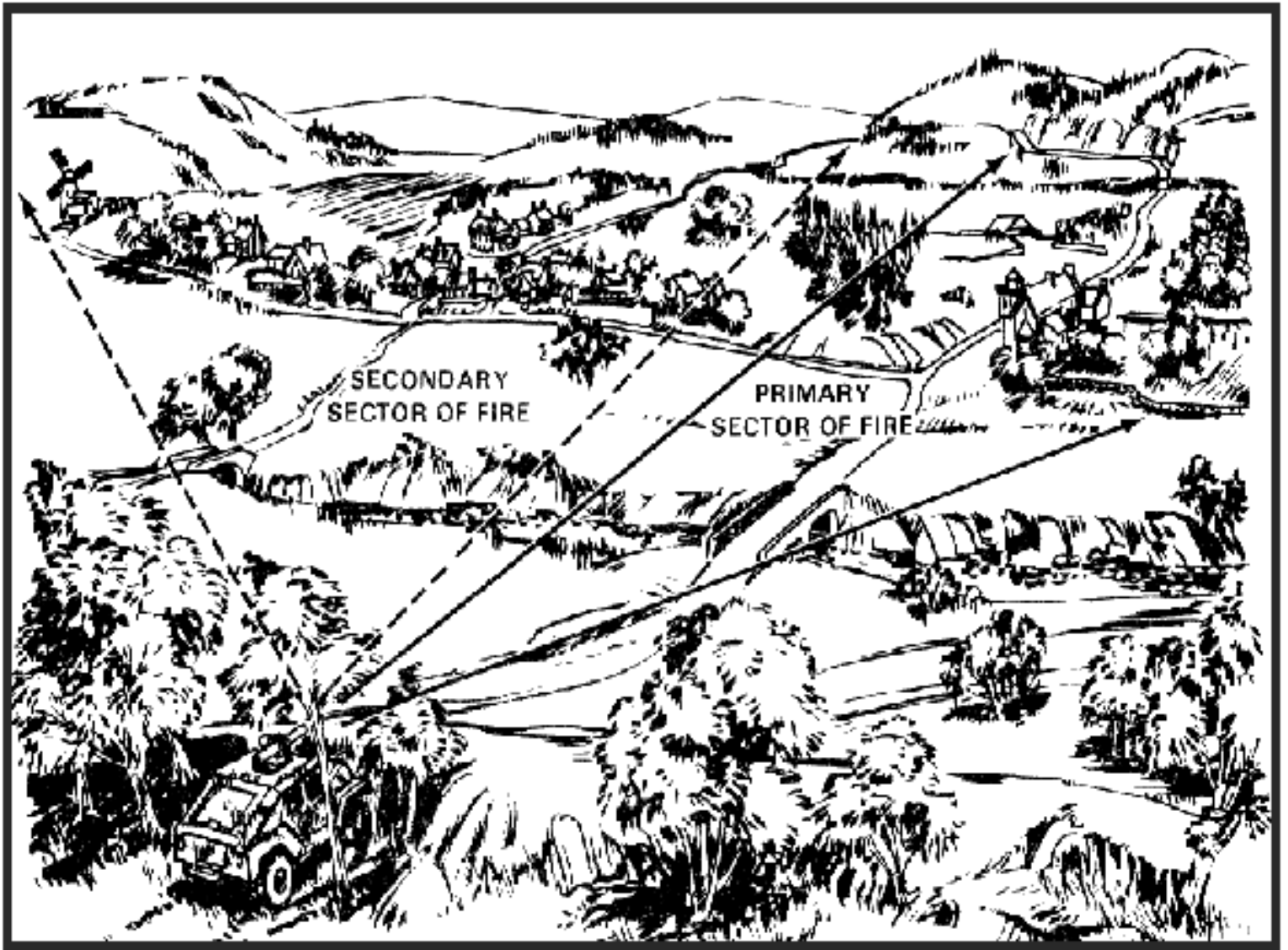


Figure 3-7. Primary and secondary sectors of fire.

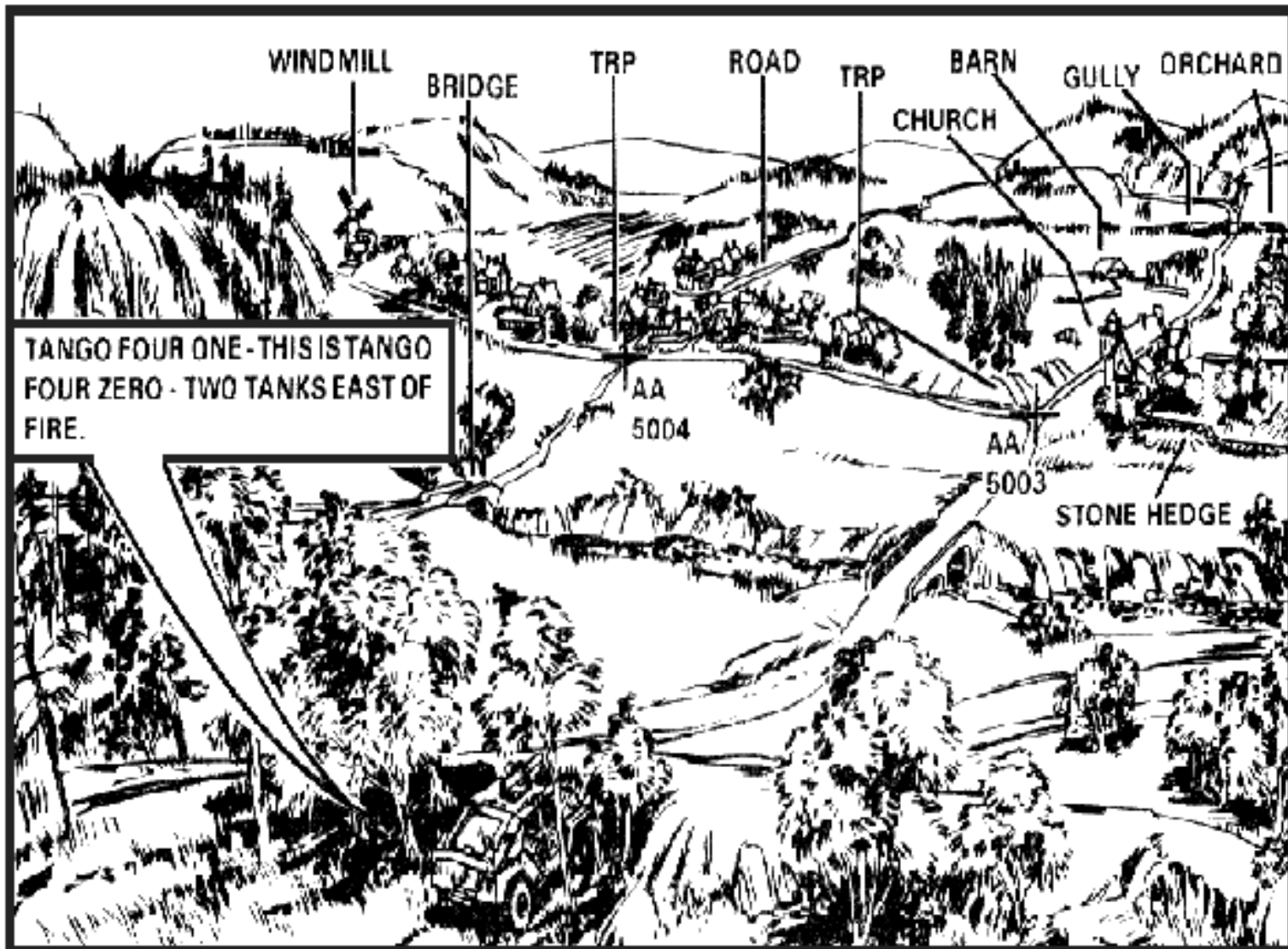


Figure 3-8. Use of target reference points.



Figure 3-9. Use of phase lines to control fires.

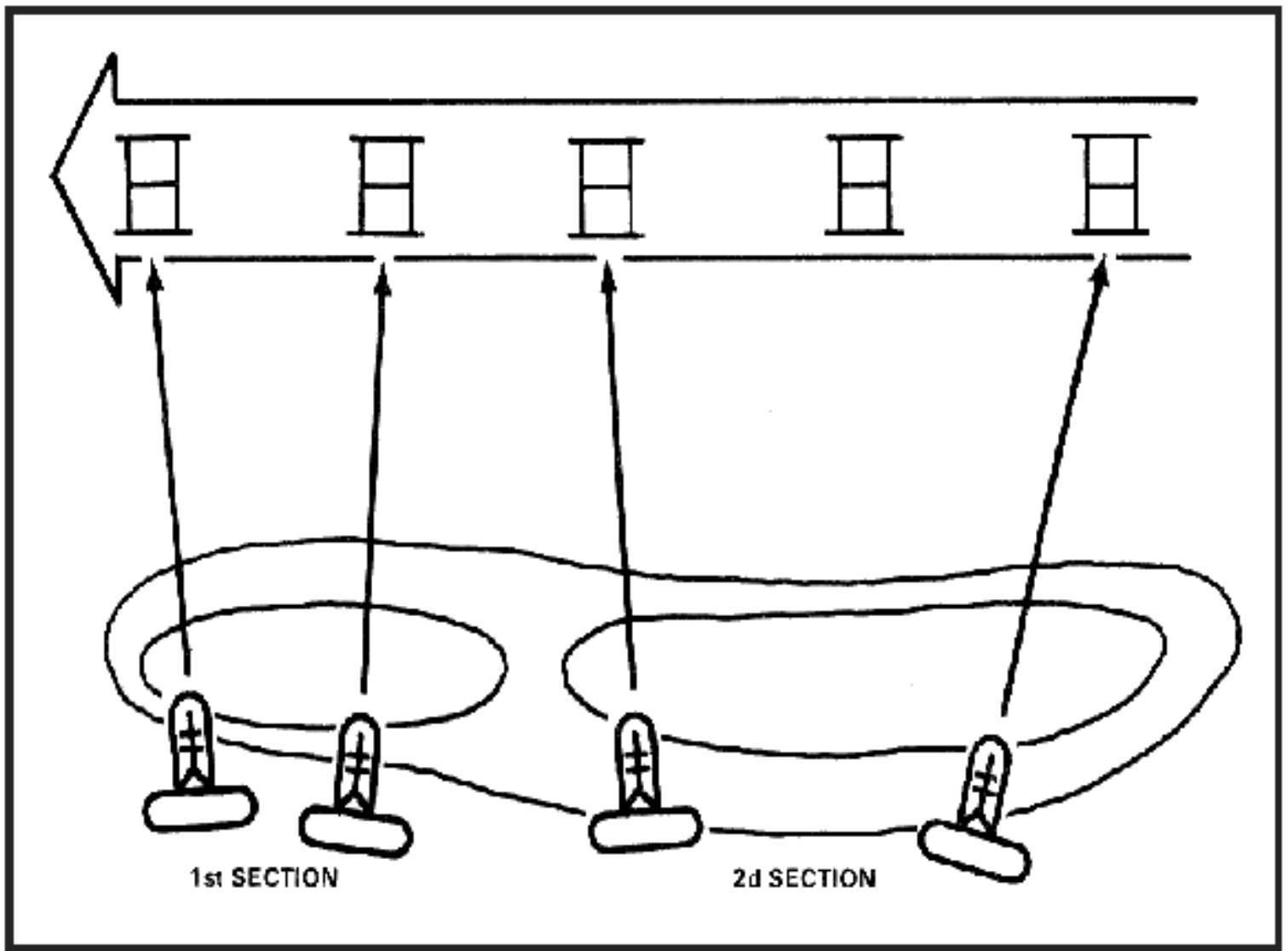


Figure 3-10. Frontal fire.

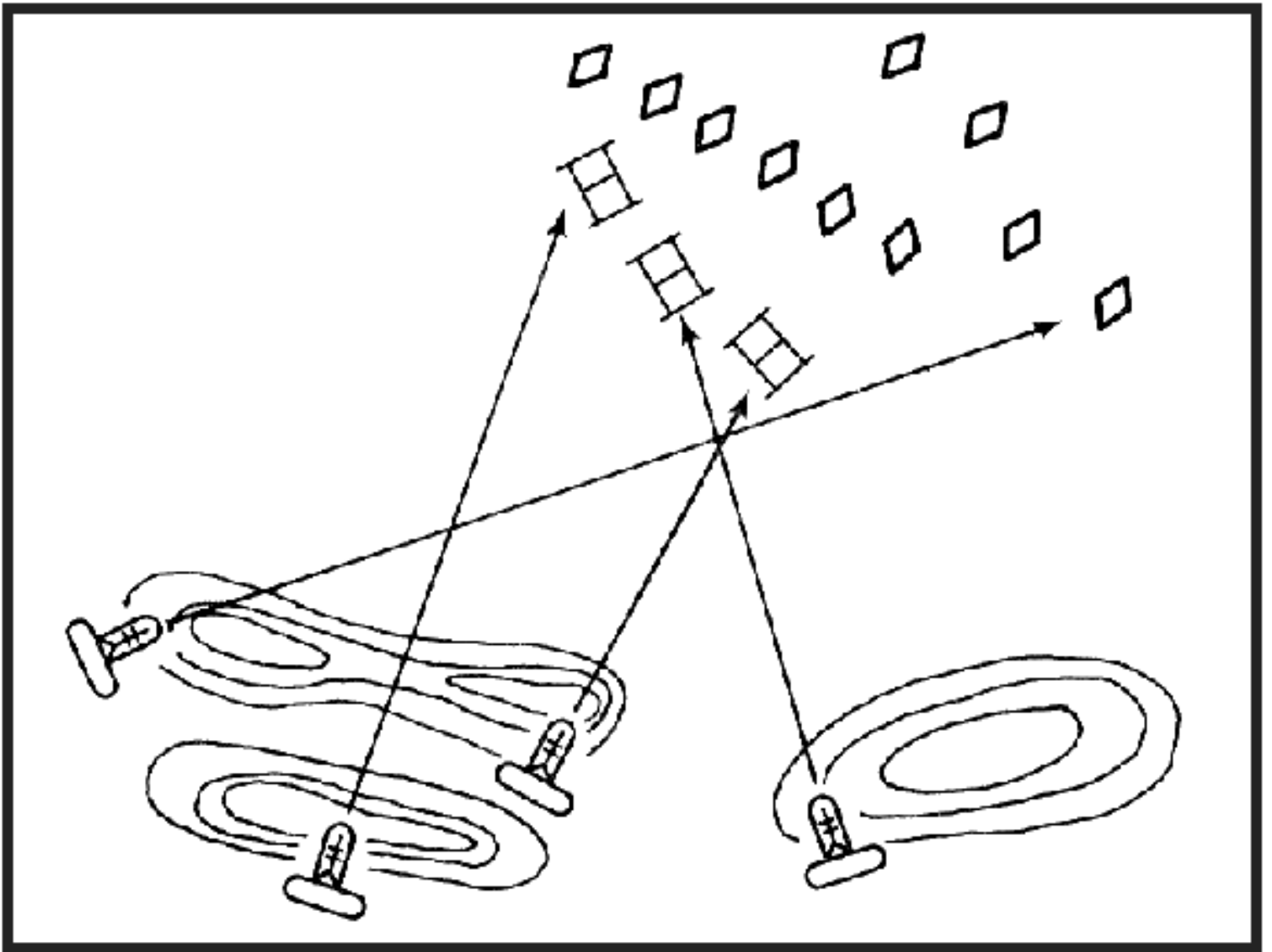


Figure 3-11. Cross fire.



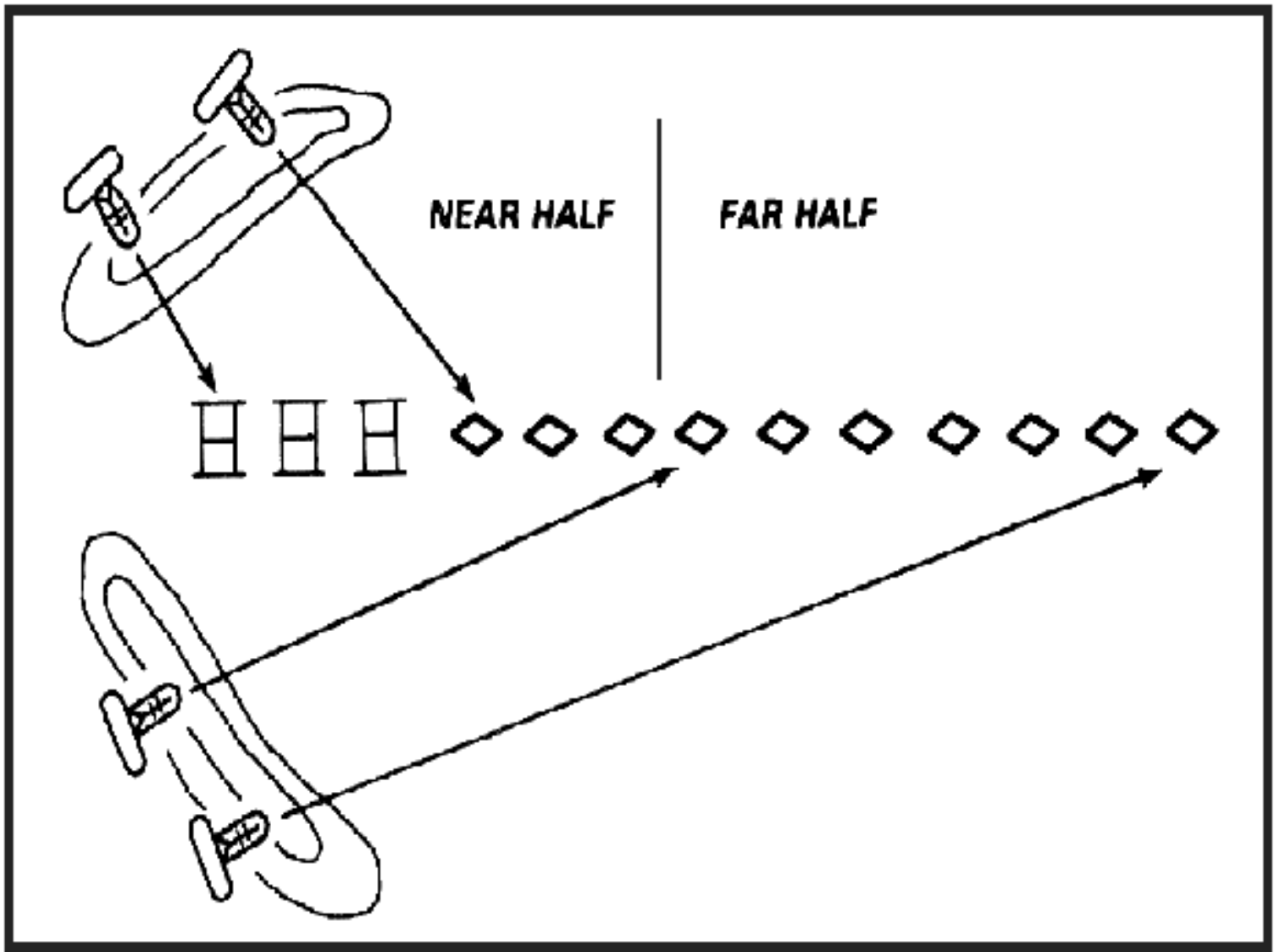


Figure 3-12. Depth fire.

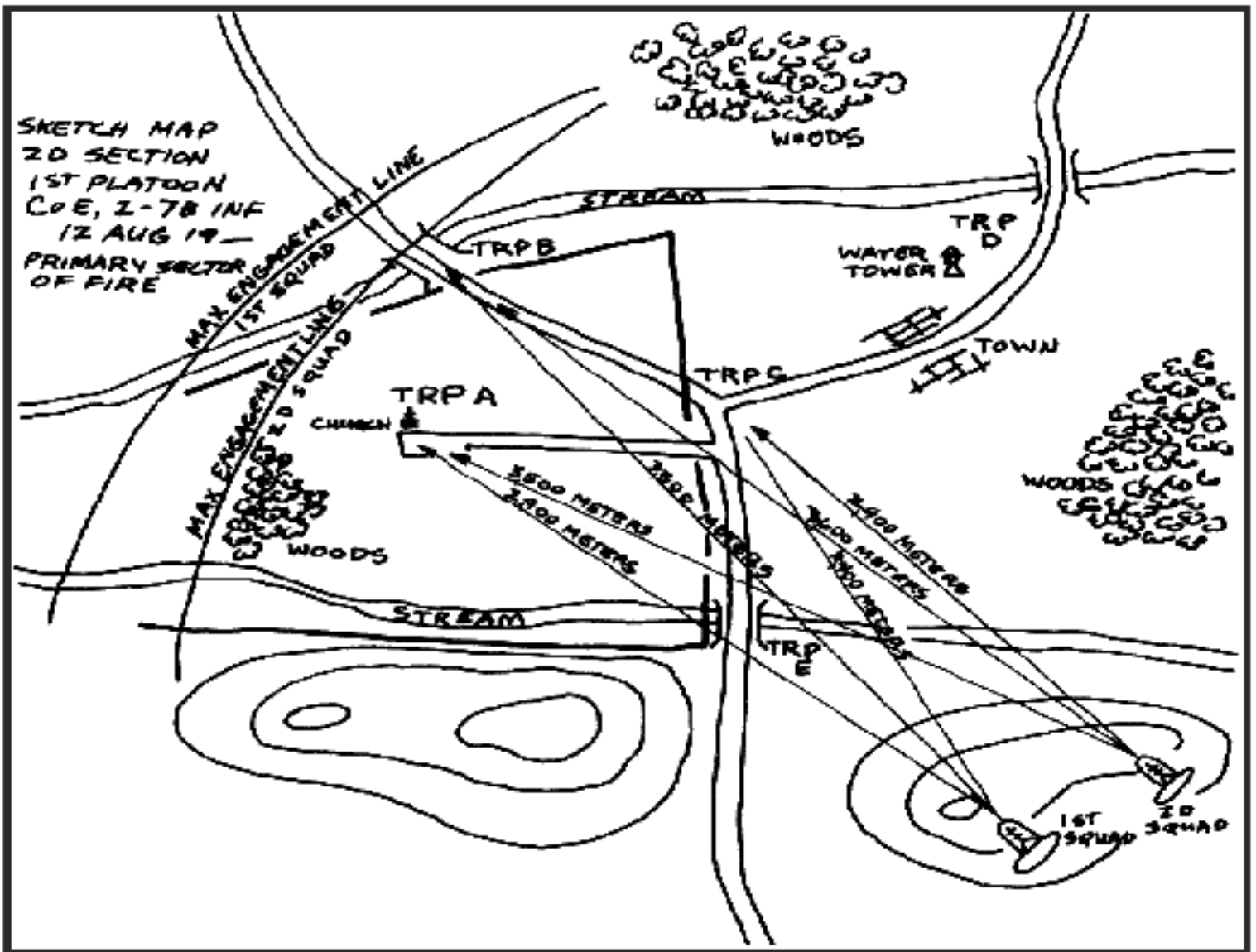


Figure 3-13. Section sector sketch.

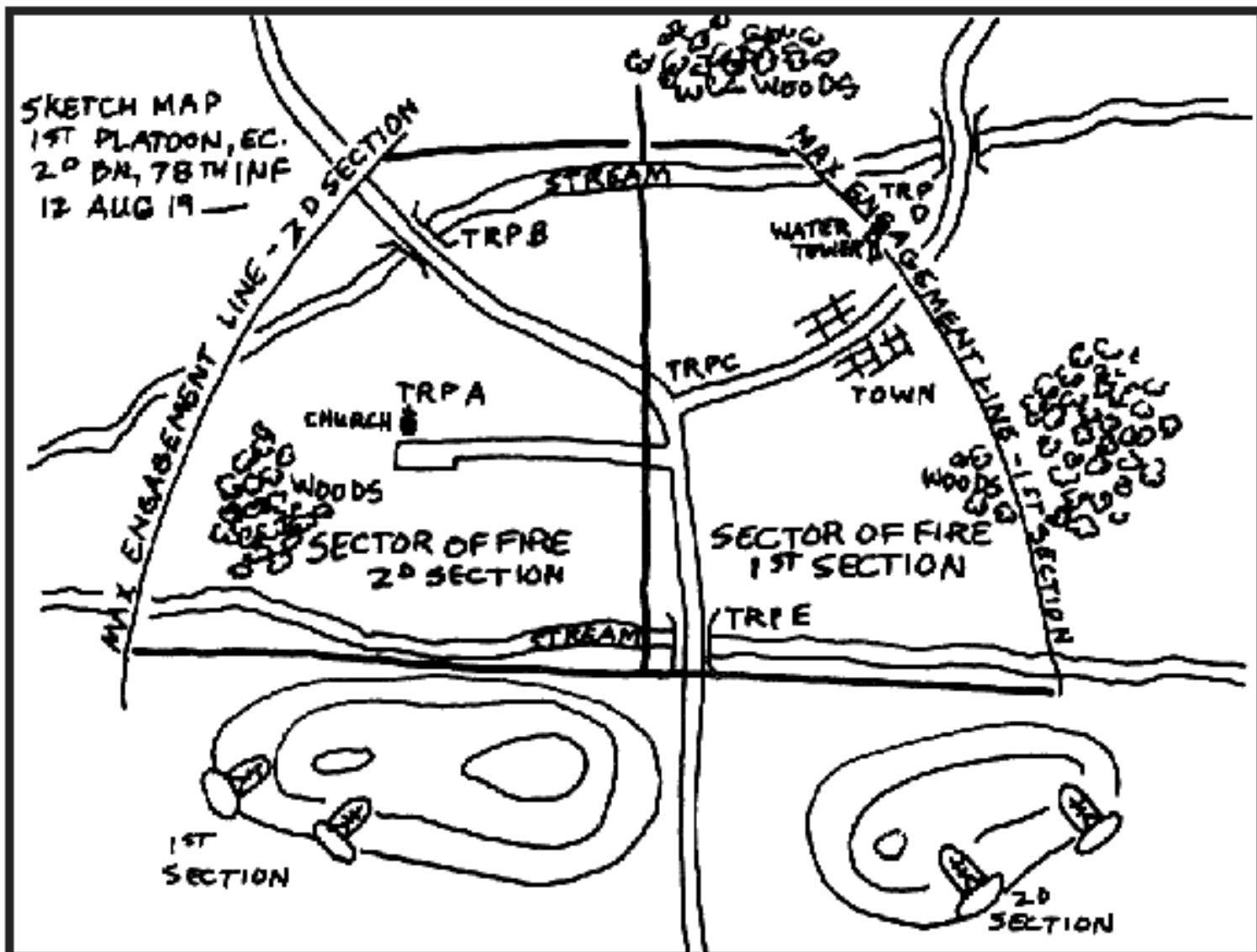


Figure 3-14. Platoon sector sketch.

POSITION	TRP				
	A	B	C	D	E
SECTION 1: PRIMARY	X	X	X		
ALTERNATE	X	X			
SUPPLEMENTARY			X	X	X
SECTION 2: PRIMARY		X	X		X
ALTERNATE			X		X
SUPPLEMENTARY				X	

Figure 3-15. Platoon engagement matrix.

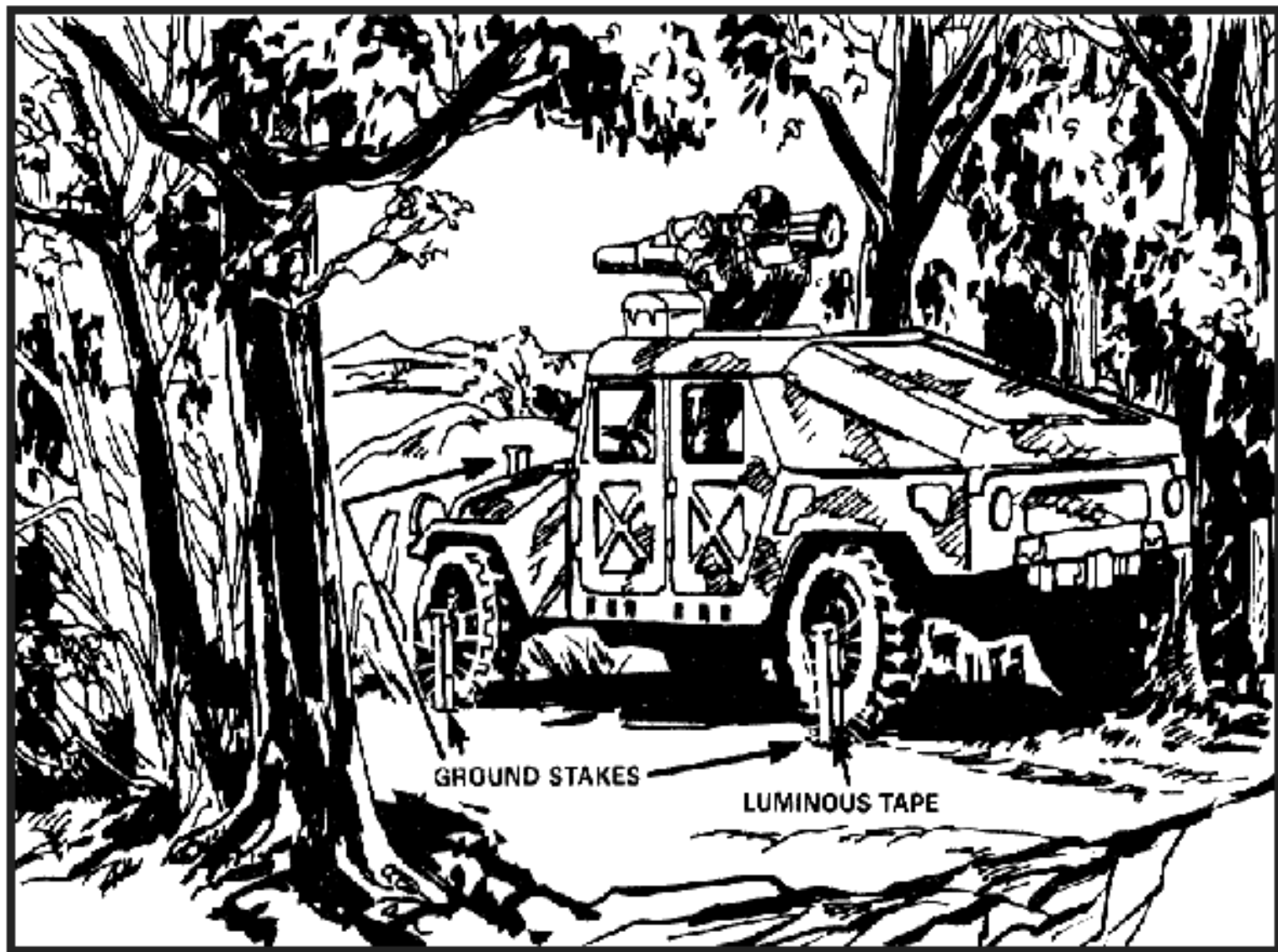


Figure 3-16. Staking the position.

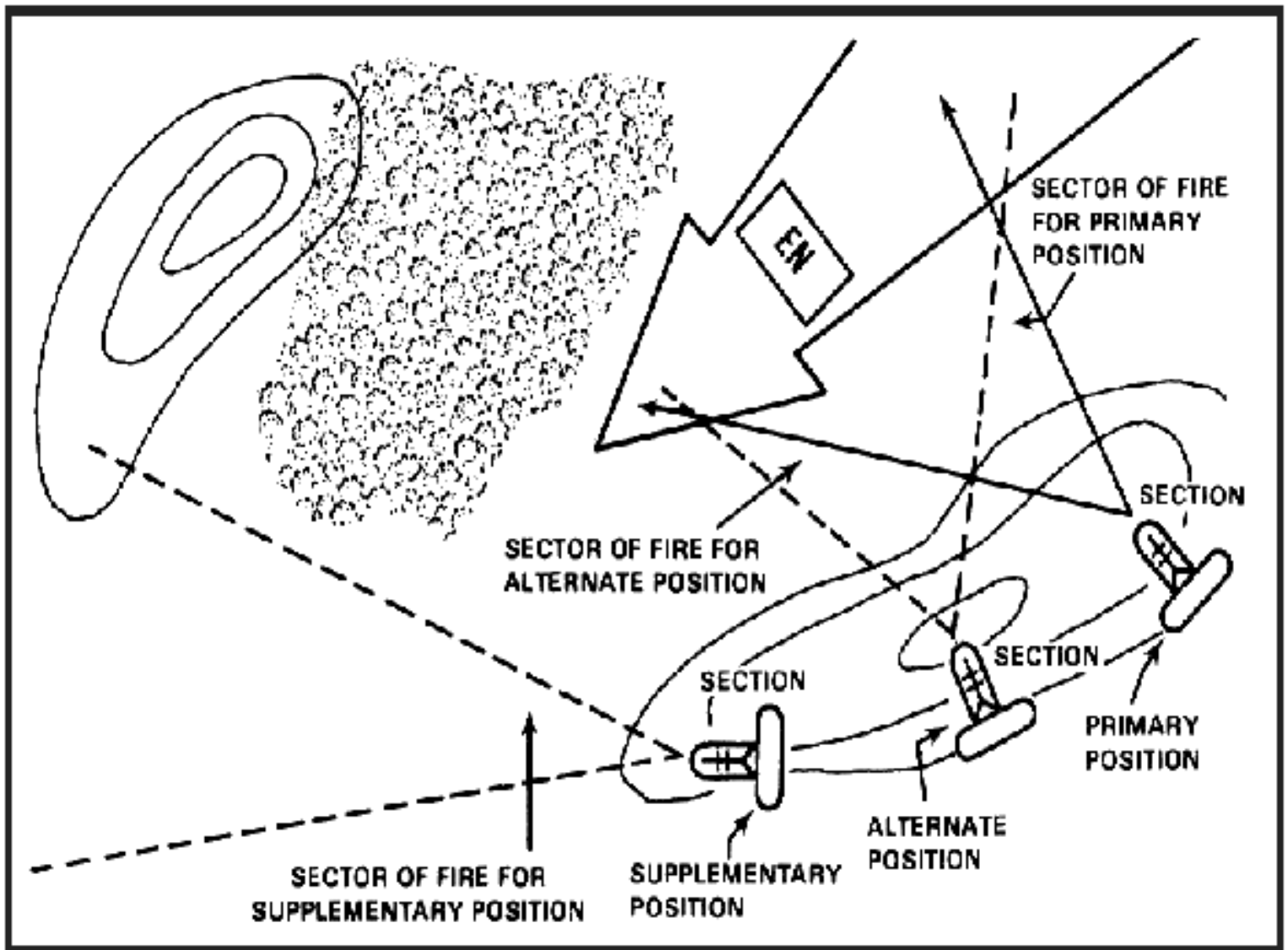


Figure 3-17. Primary, alternate, and supplementary positions.



Figure 3-18. Camouflage the position.

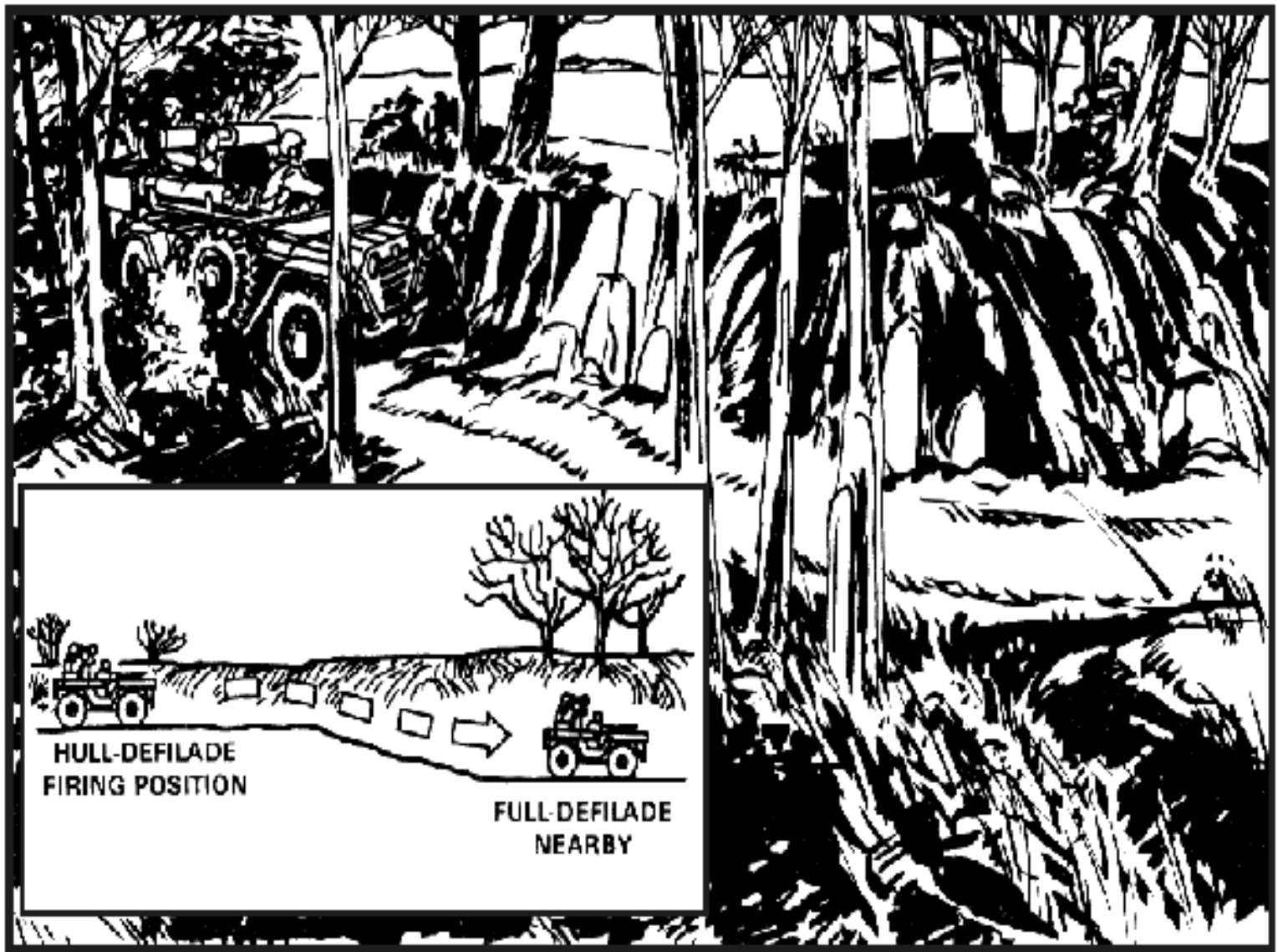


Figure 3-19. Natural hull-down position.





Figure 3-20. Excavated hull-down position.

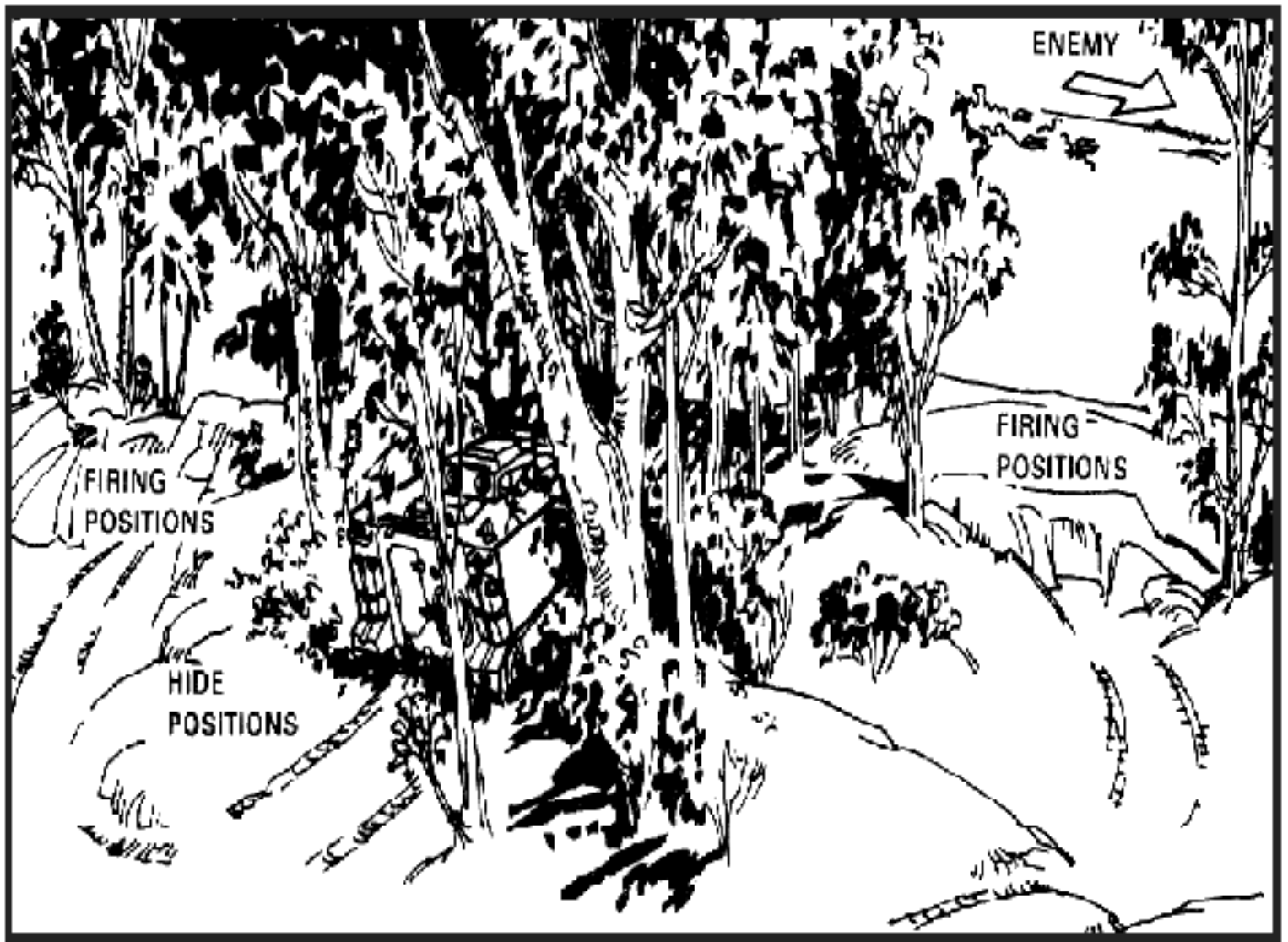


Figure 3-21. Hide position to hull-down position.

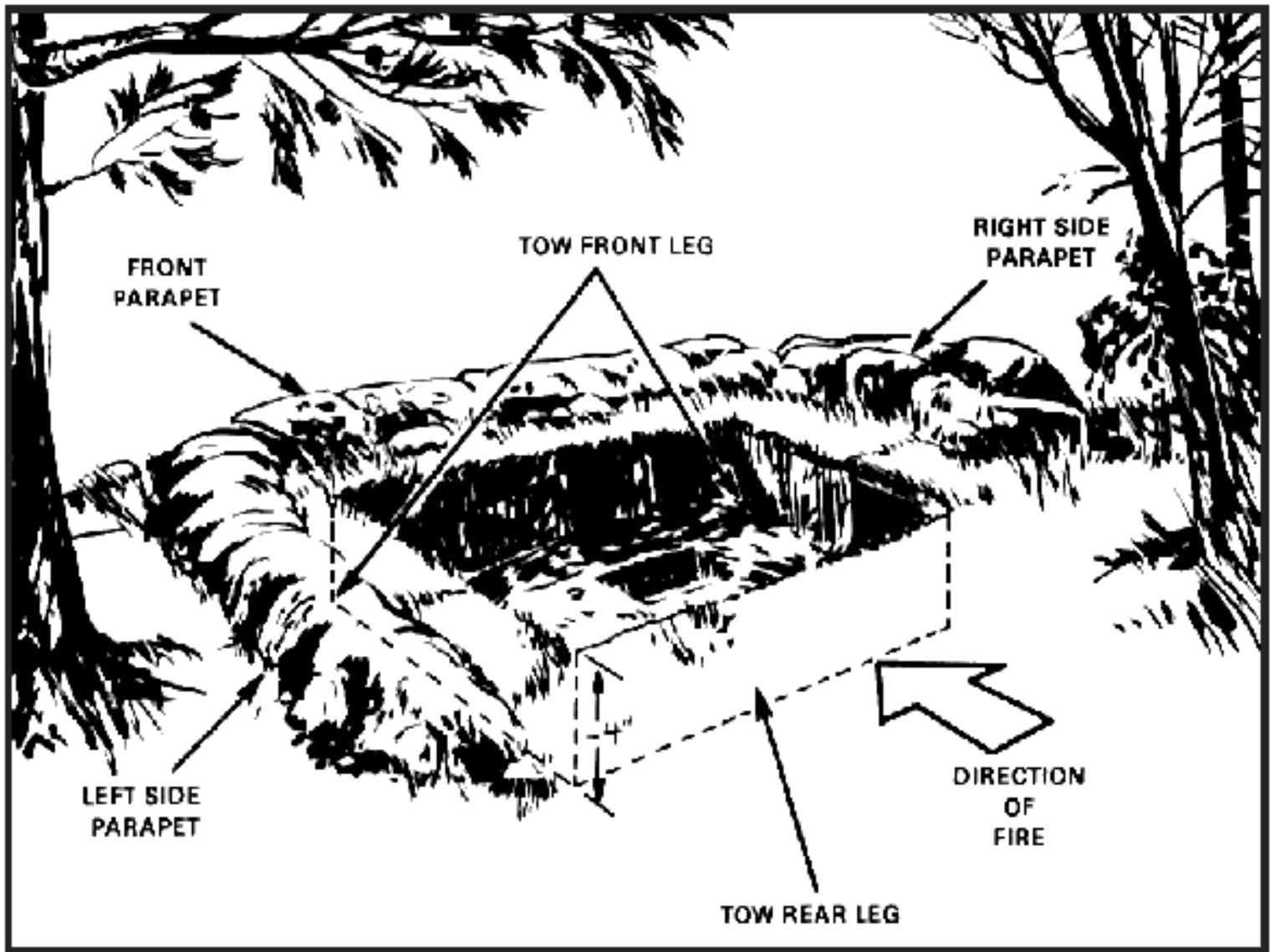


Figure 3-22. Outline of dismounted position.

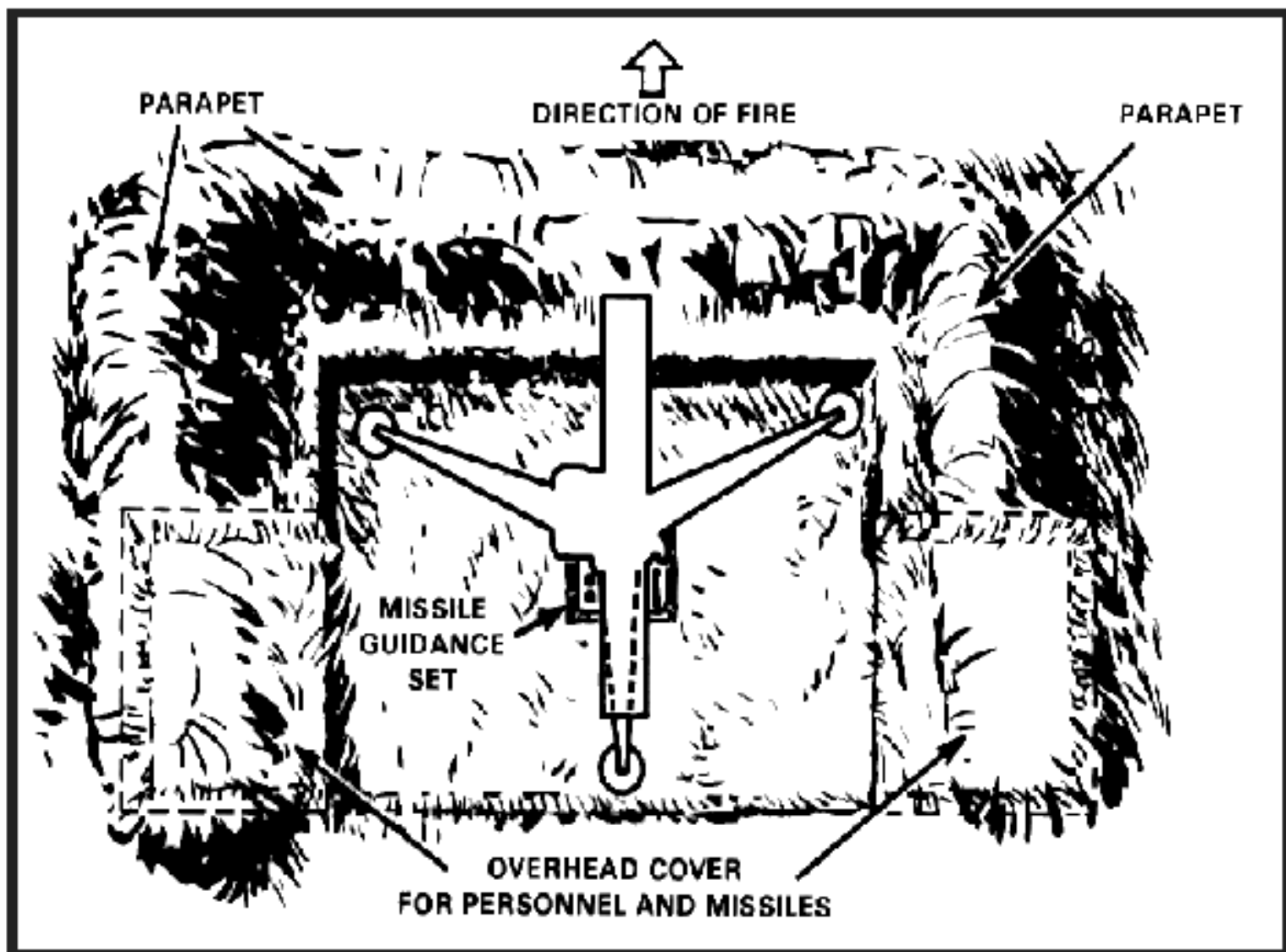


Figure 3-23. Position of missile guidance set.

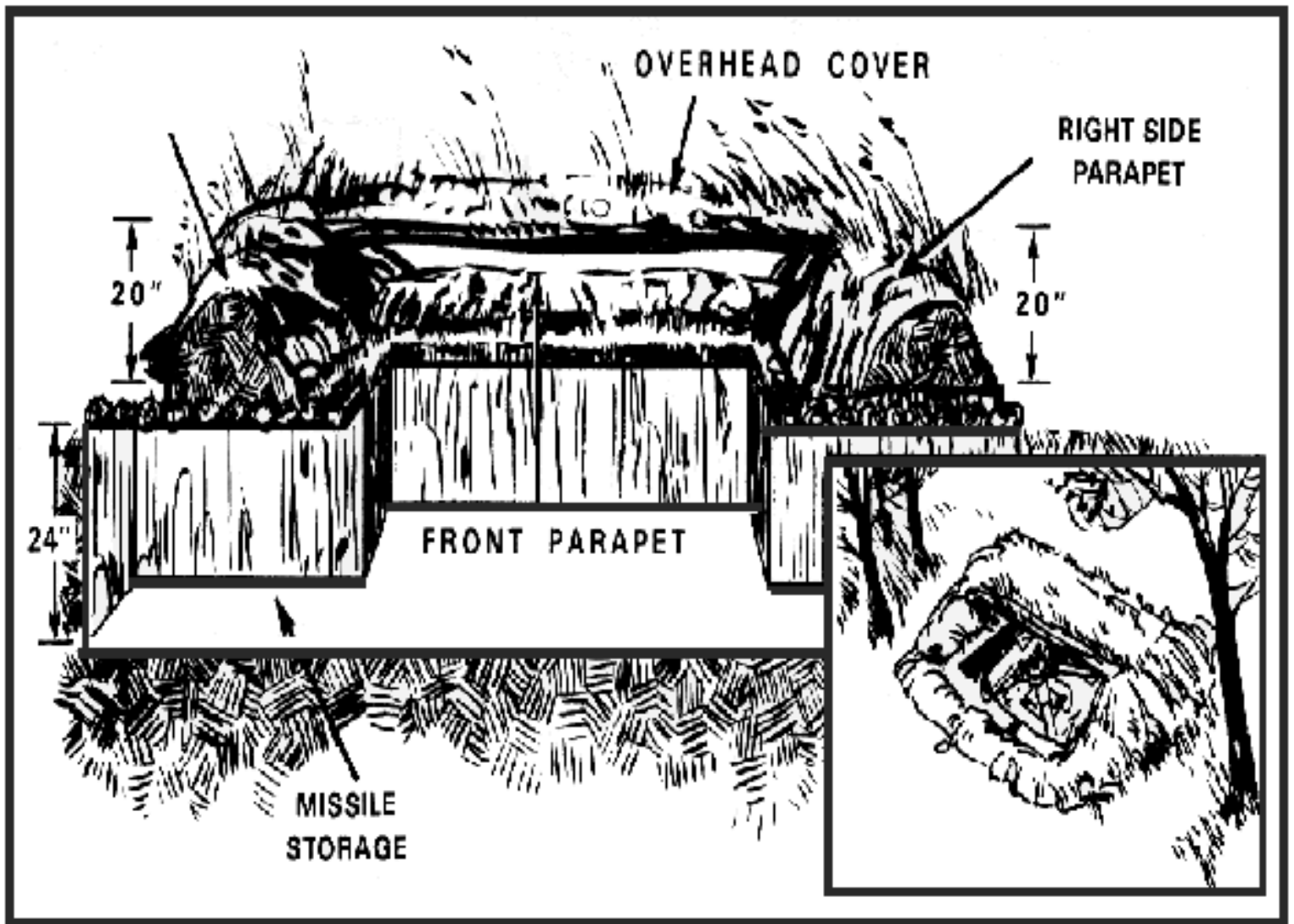


Figure 3-24. Overhead cover.

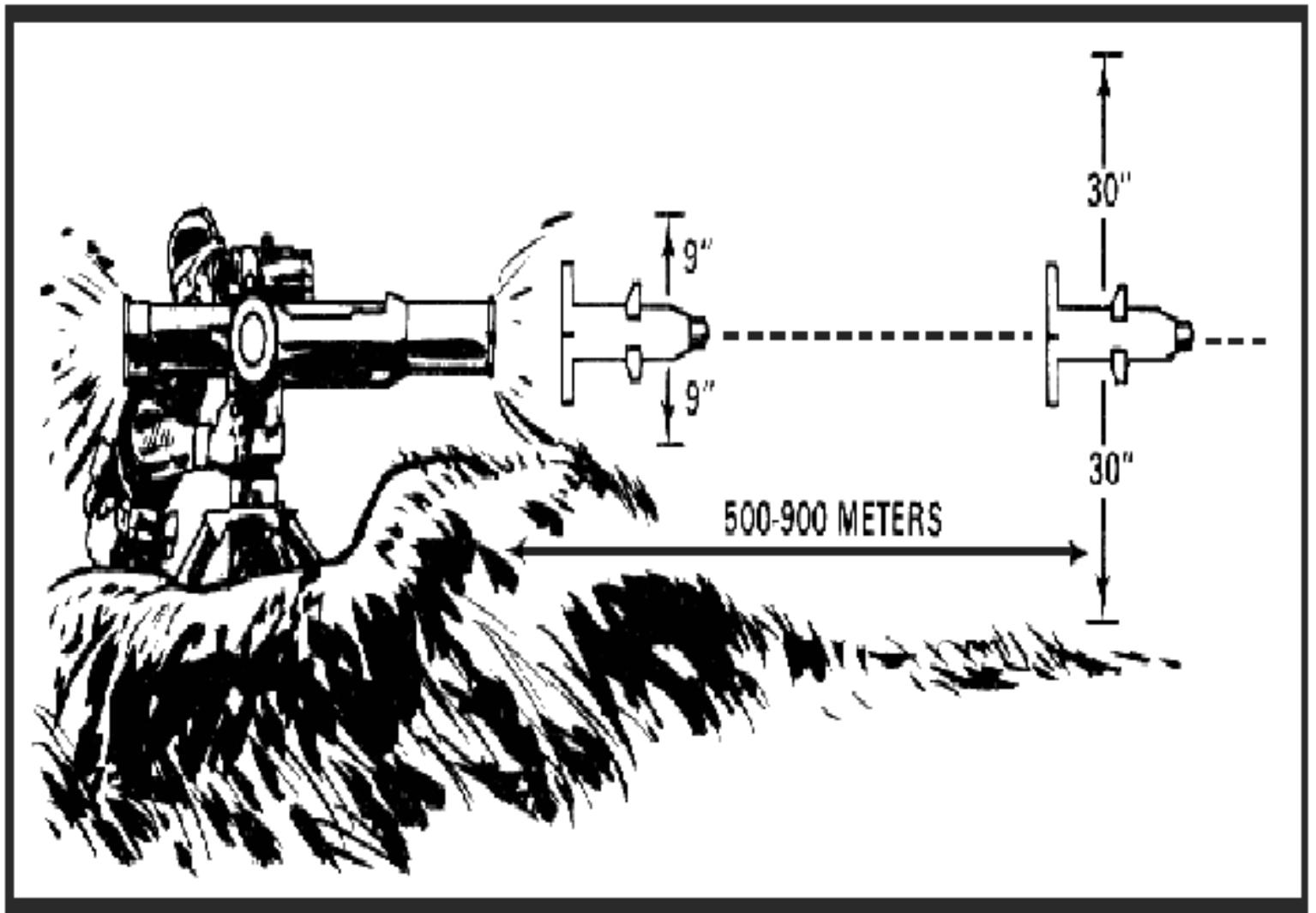


Figure 3-25. Clearance requirements.

		HEIGHT OF LINE OF SIGHT ABOVE THE GROUND		
		18 INCHES	20 INCHES	30 INCHES
RANGE TO TARGET	200M	.98	.98	1.0
	300M	.95	.96	1.0
	400M	.91	.91	.98
	500M	.86	.91	.98
	1,000 to 3,000/3,750M	.56	.61	.93

Figure 3-26. Probability of survival for the TOW.

LIKELIHOOD OF CONTACT	MOVEMENT TECHNIQUE
① NOT LIKELY	TRAVELING
② PROBABLE	TRAVELING OVERWATCH
③ EXPECTED	BOUNDING OVERWATCH

Figure 3-27. Selection of movement techniques.



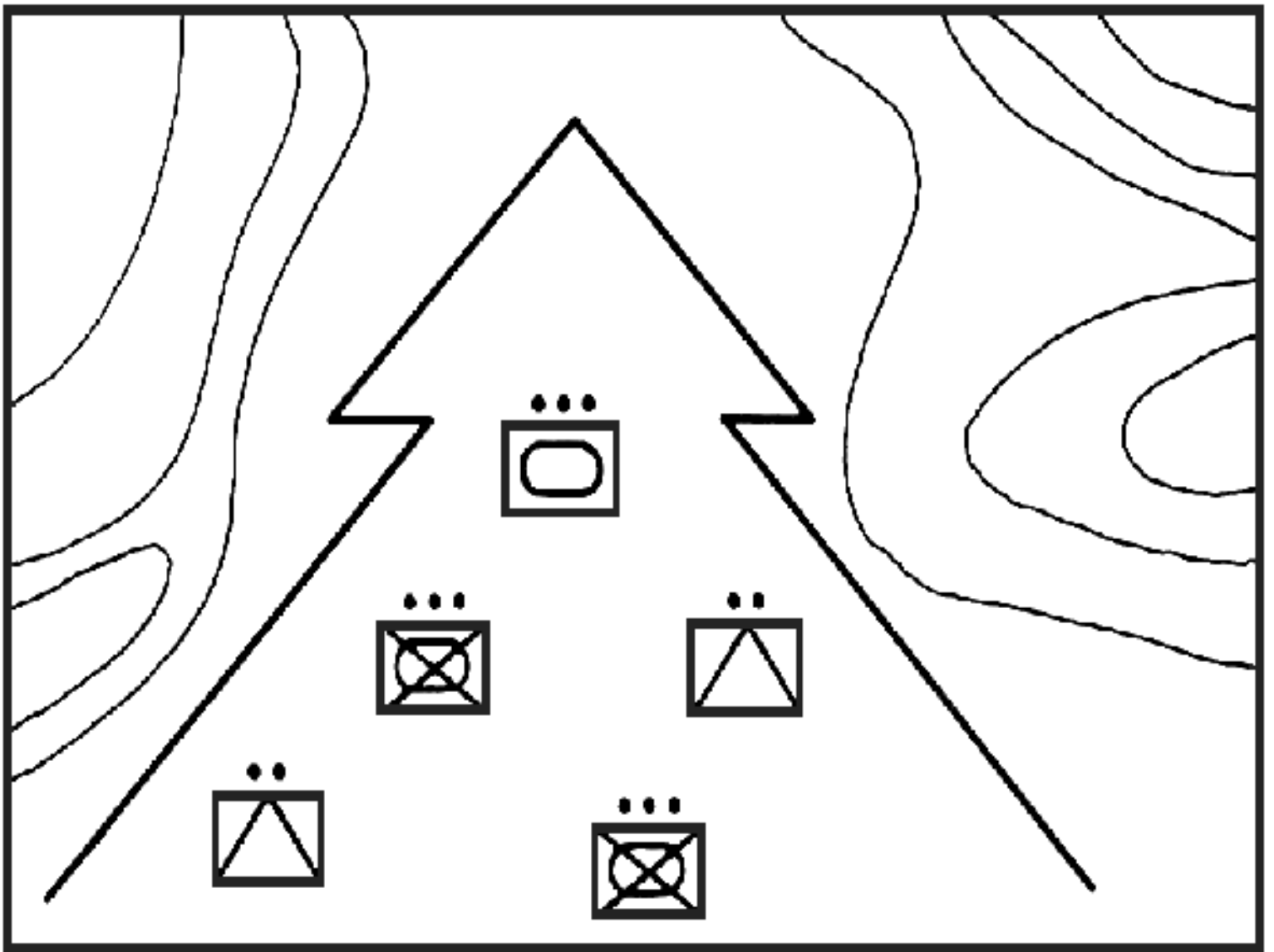


Figure 3-28. Travelling.

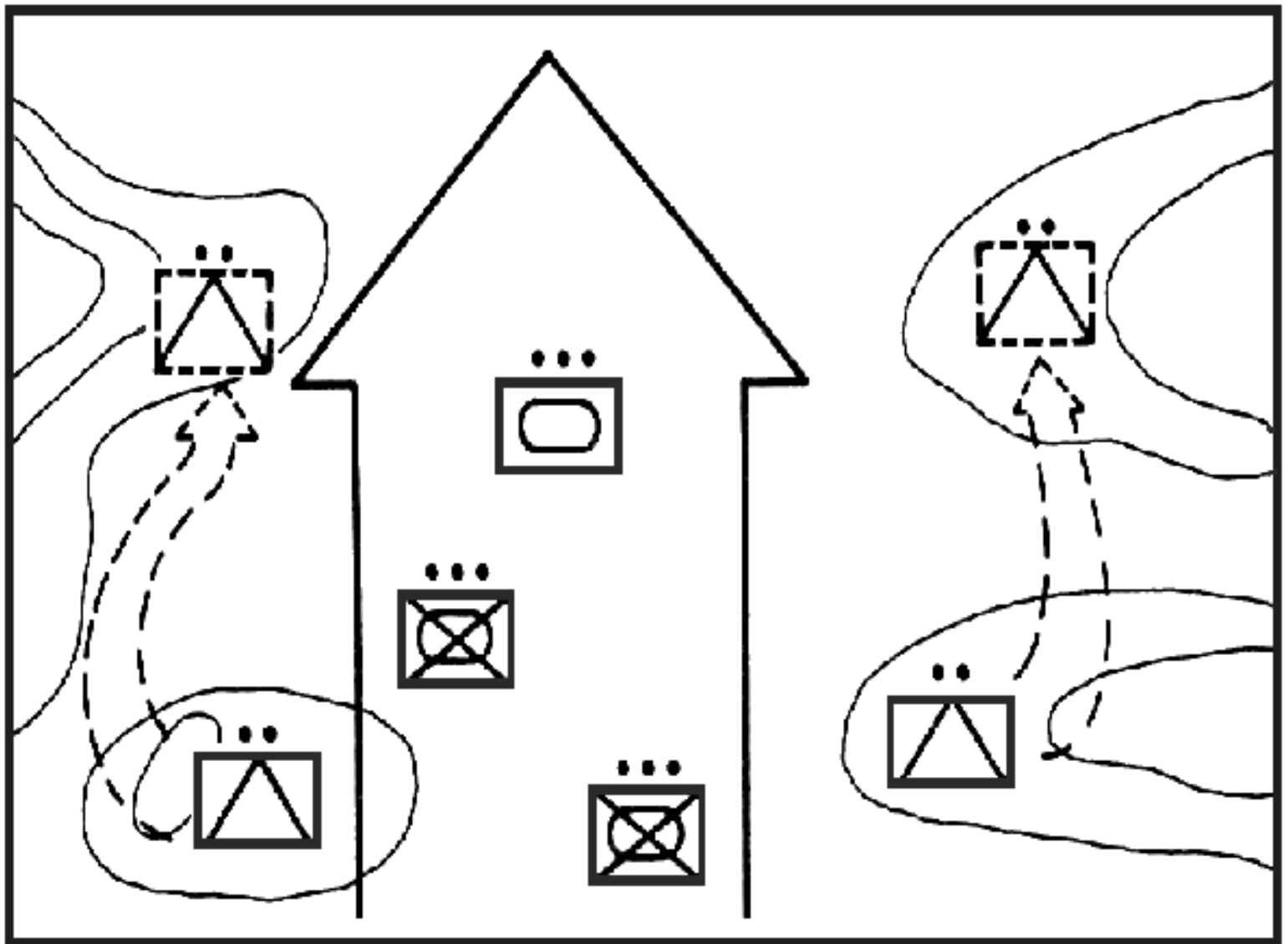


Figure 3-29. Traveling overwatch.

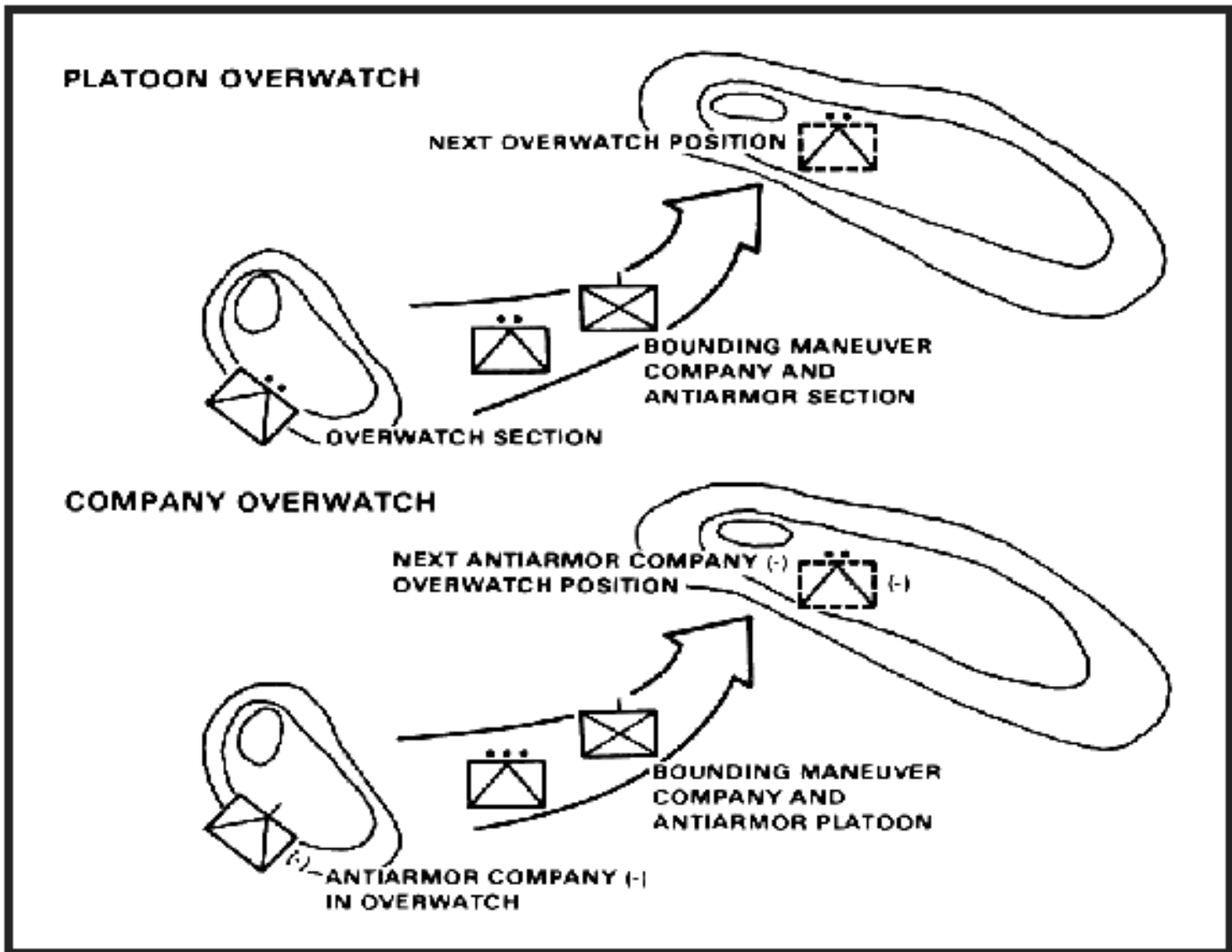


Figure 3-30. Bounding overwatch.

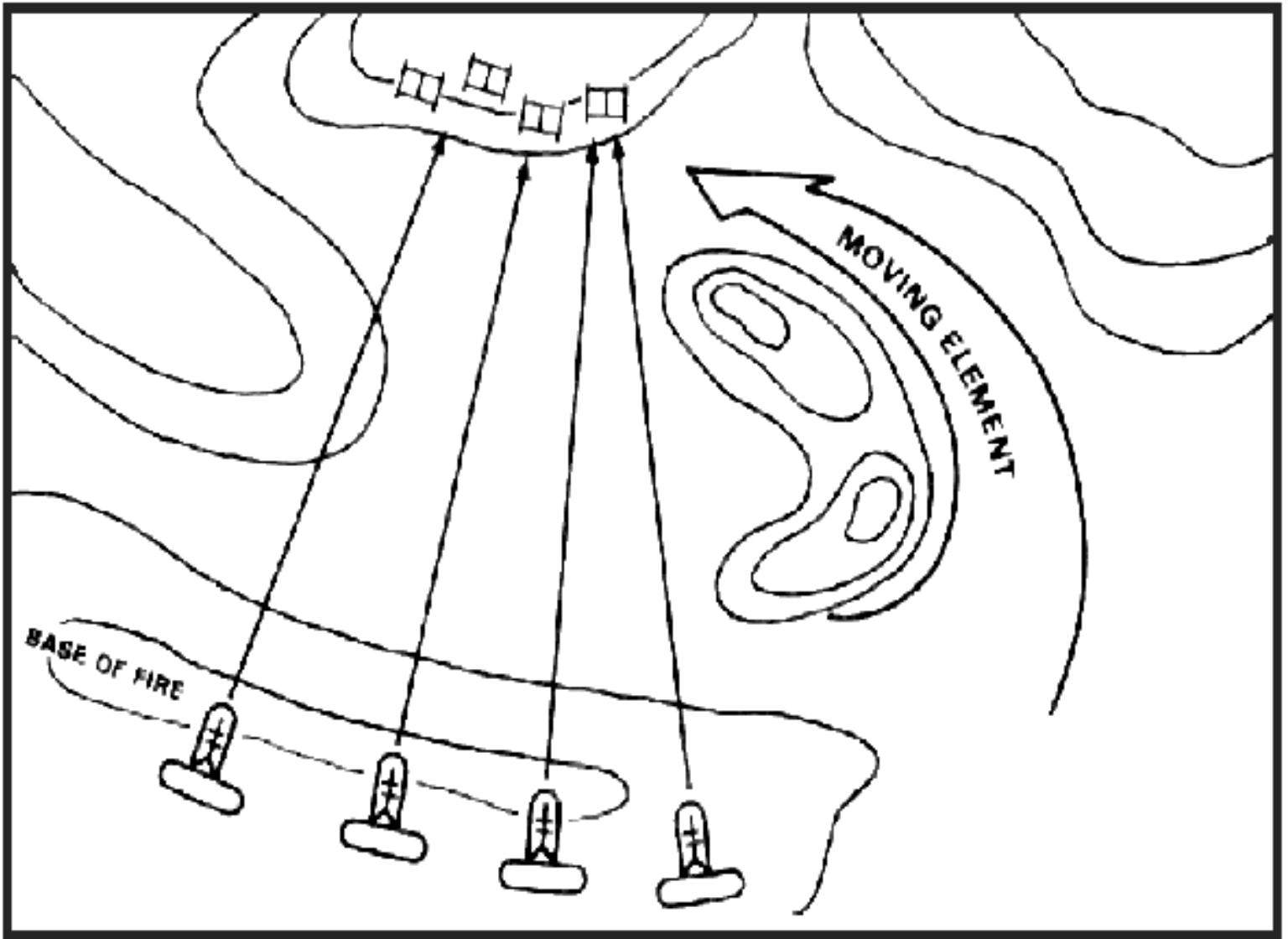


Figure 3-31. Maneuver.

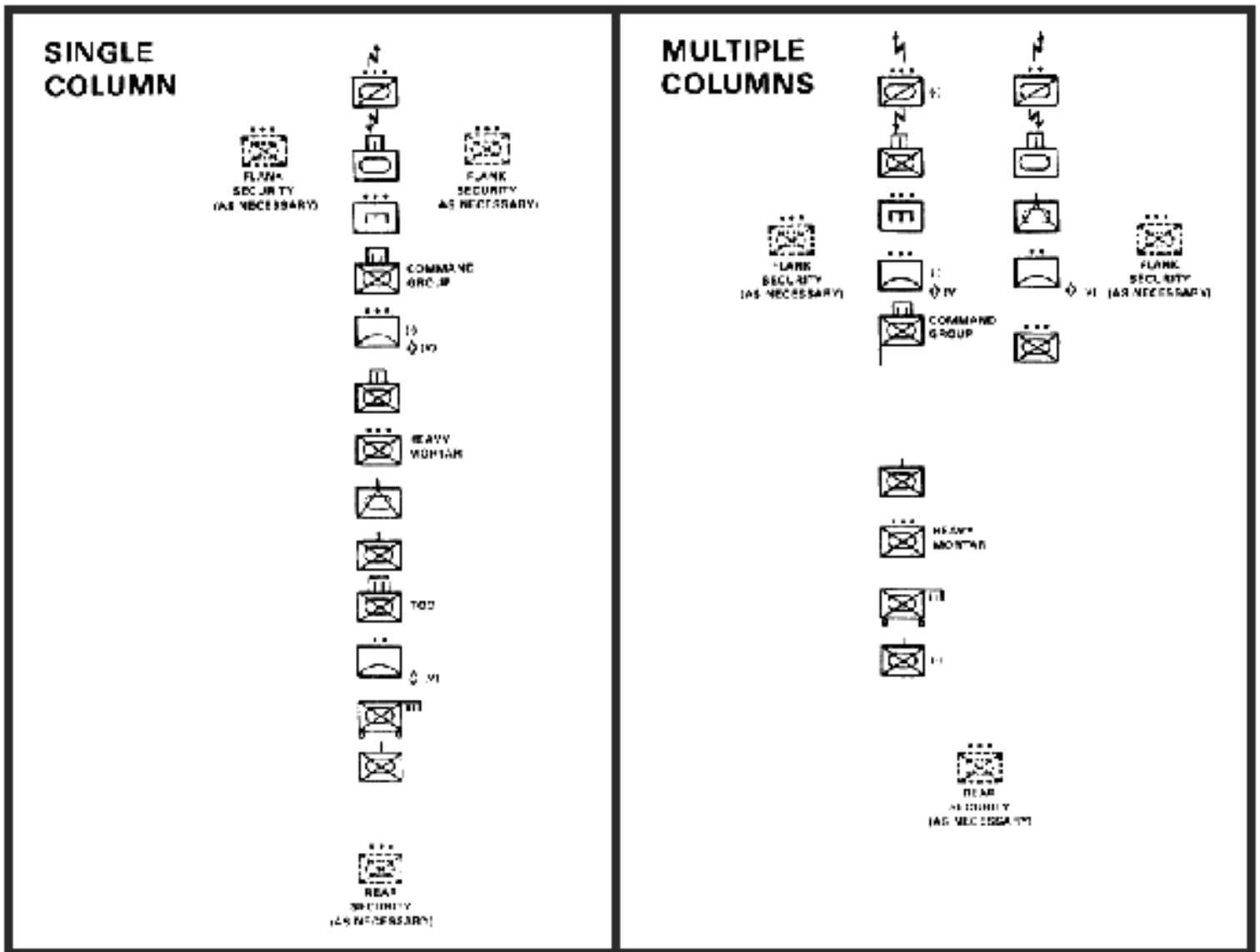


Figure 3-32. Movement to contact.

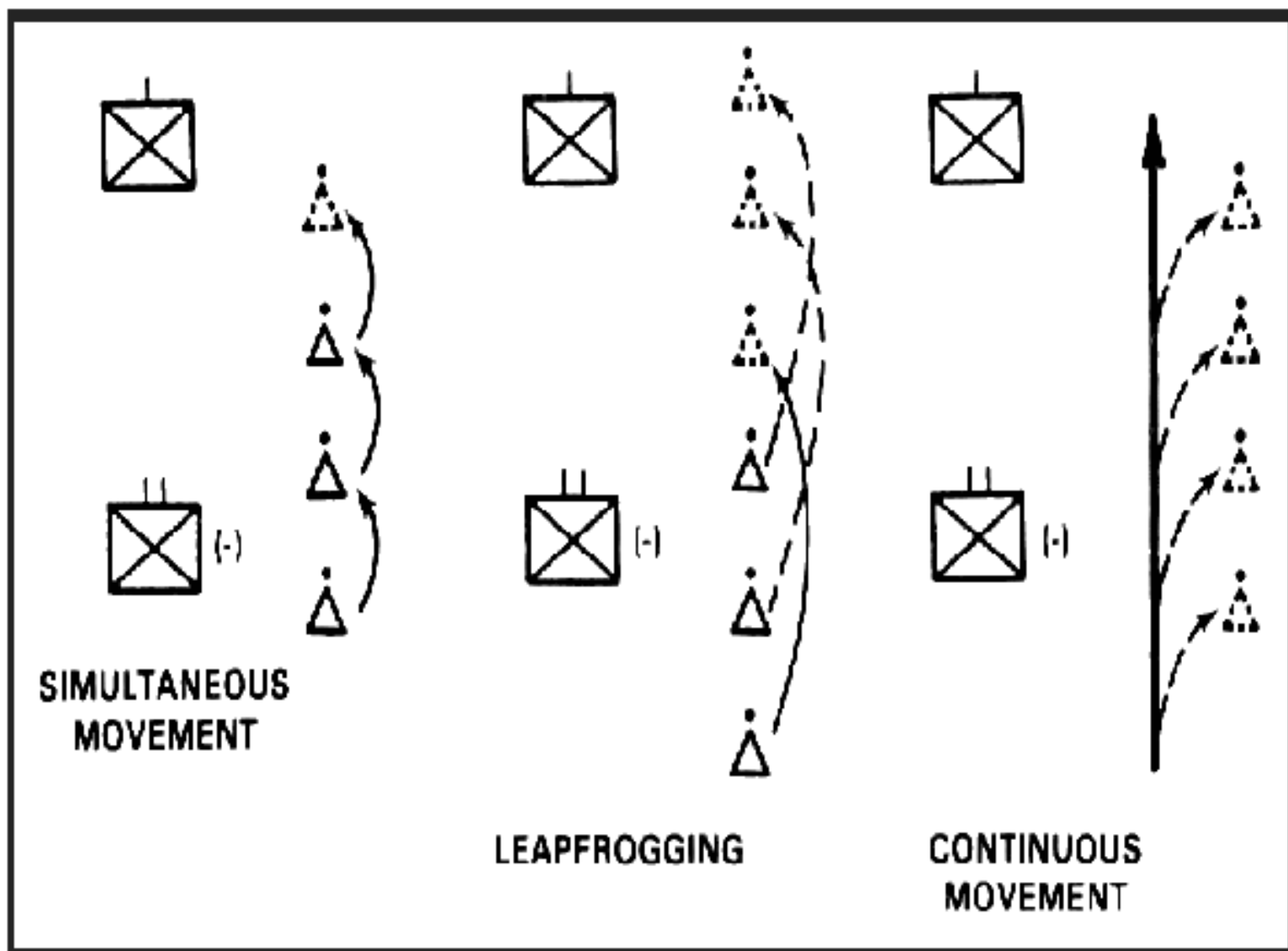


Figure 3-33. Flank screen.

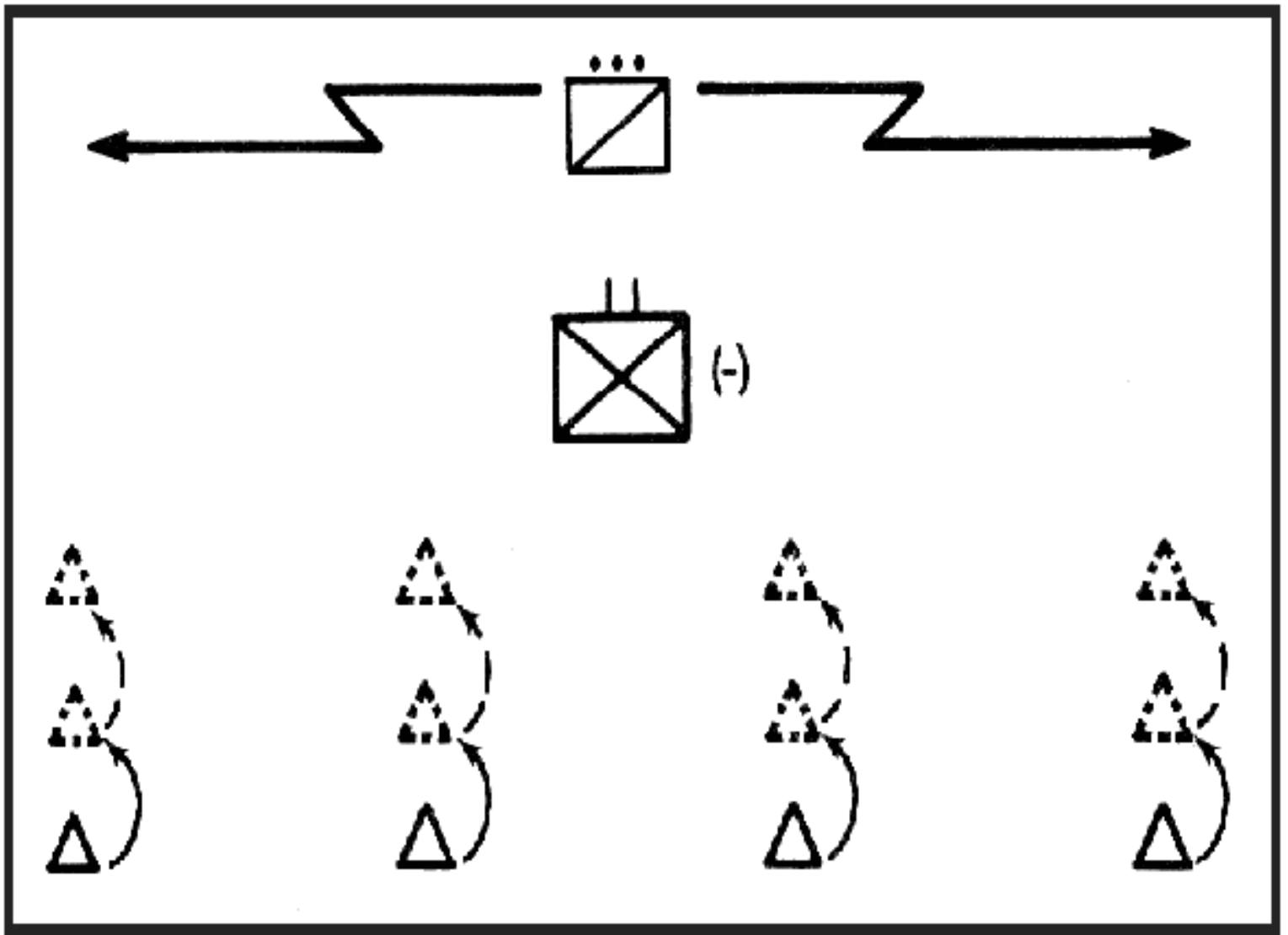


Figure 3-34. Rear screen.

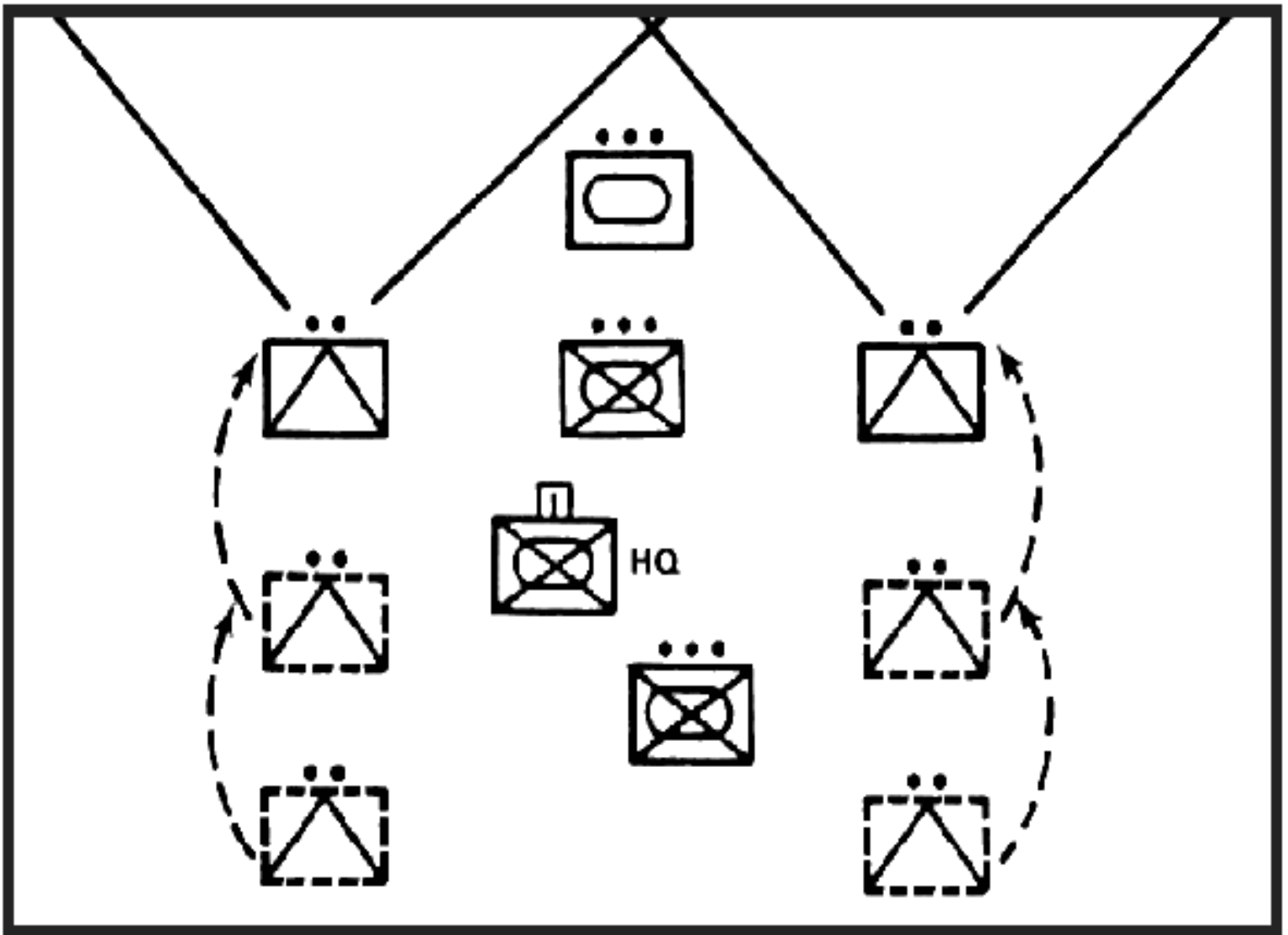


Figure 3-35. Lead company team traveling overwatch.



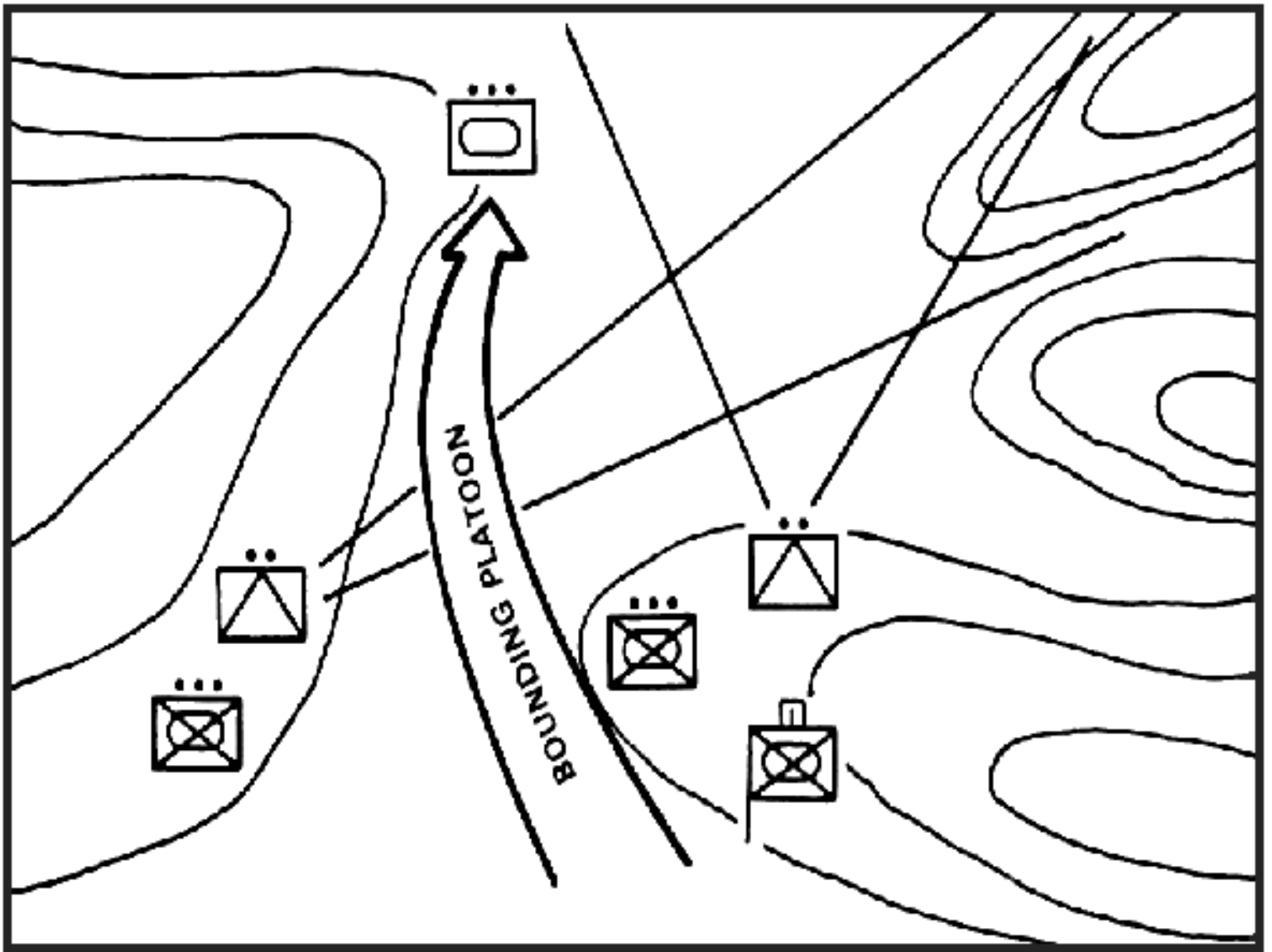


Figure 3-36. Lead company team bounding.

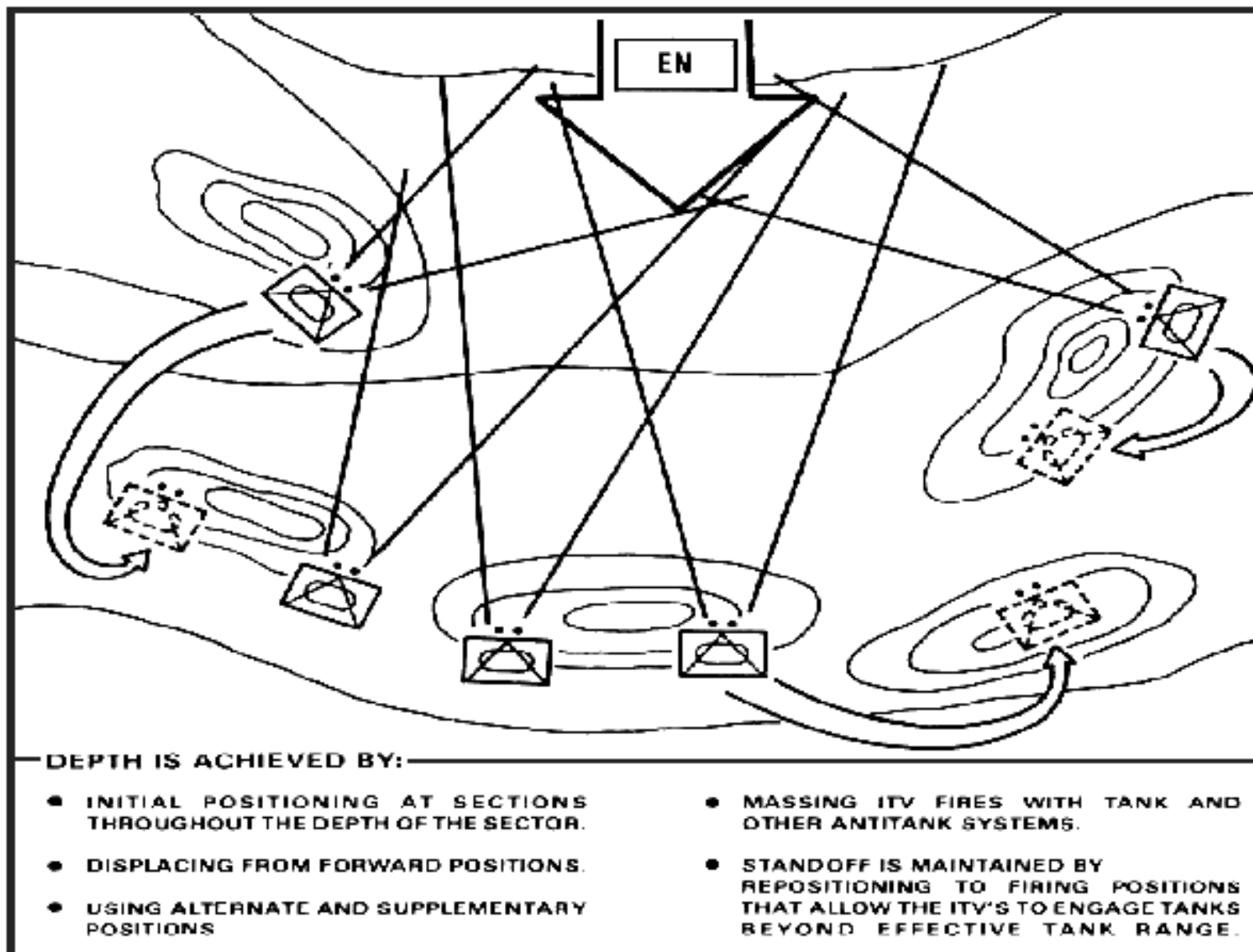


Figure 3-37. Massing of fires using in-depth positions.

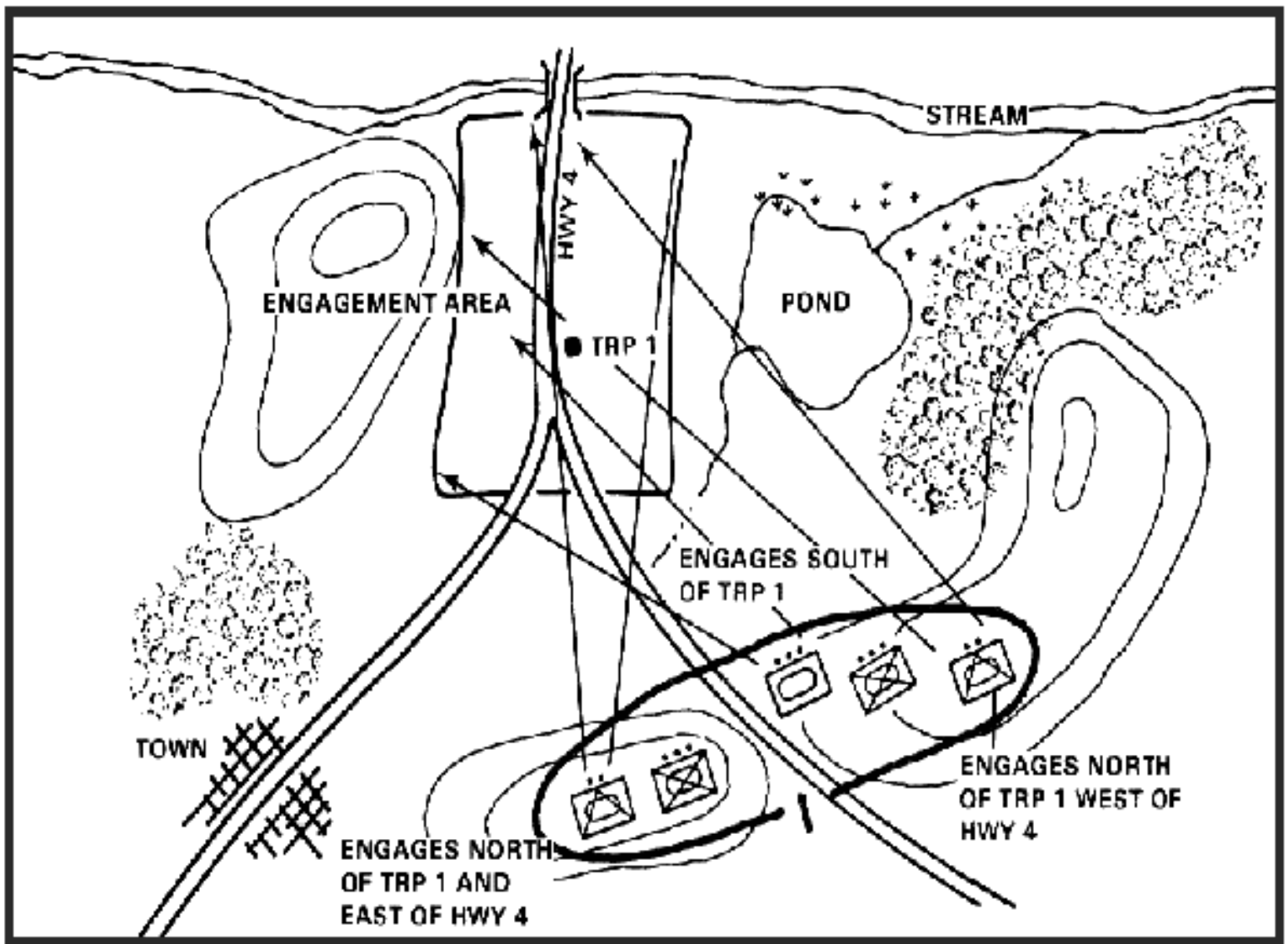


Figure 3-38. Massing of fires from a single position.

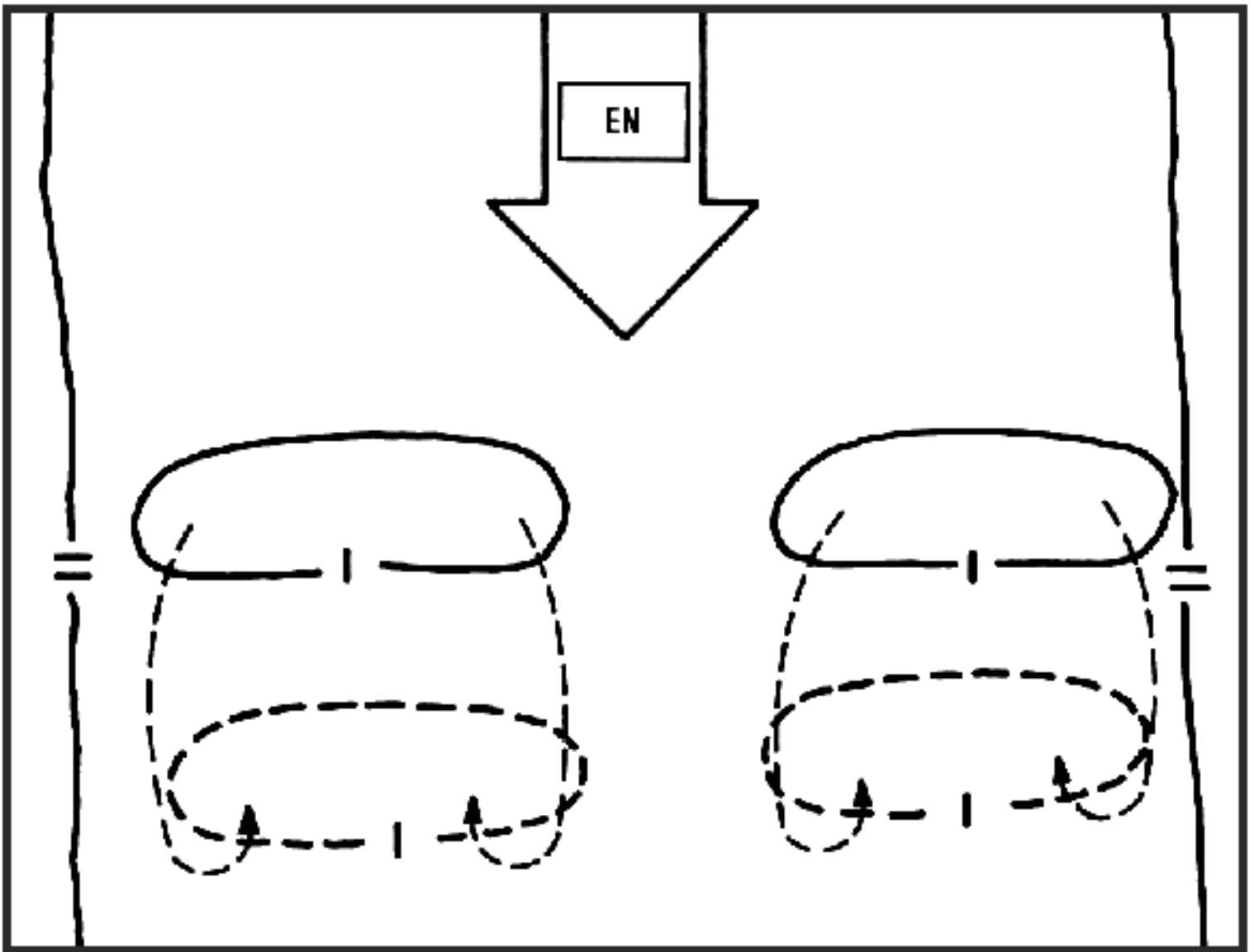


Figure 3-39. Delay on successive positions.

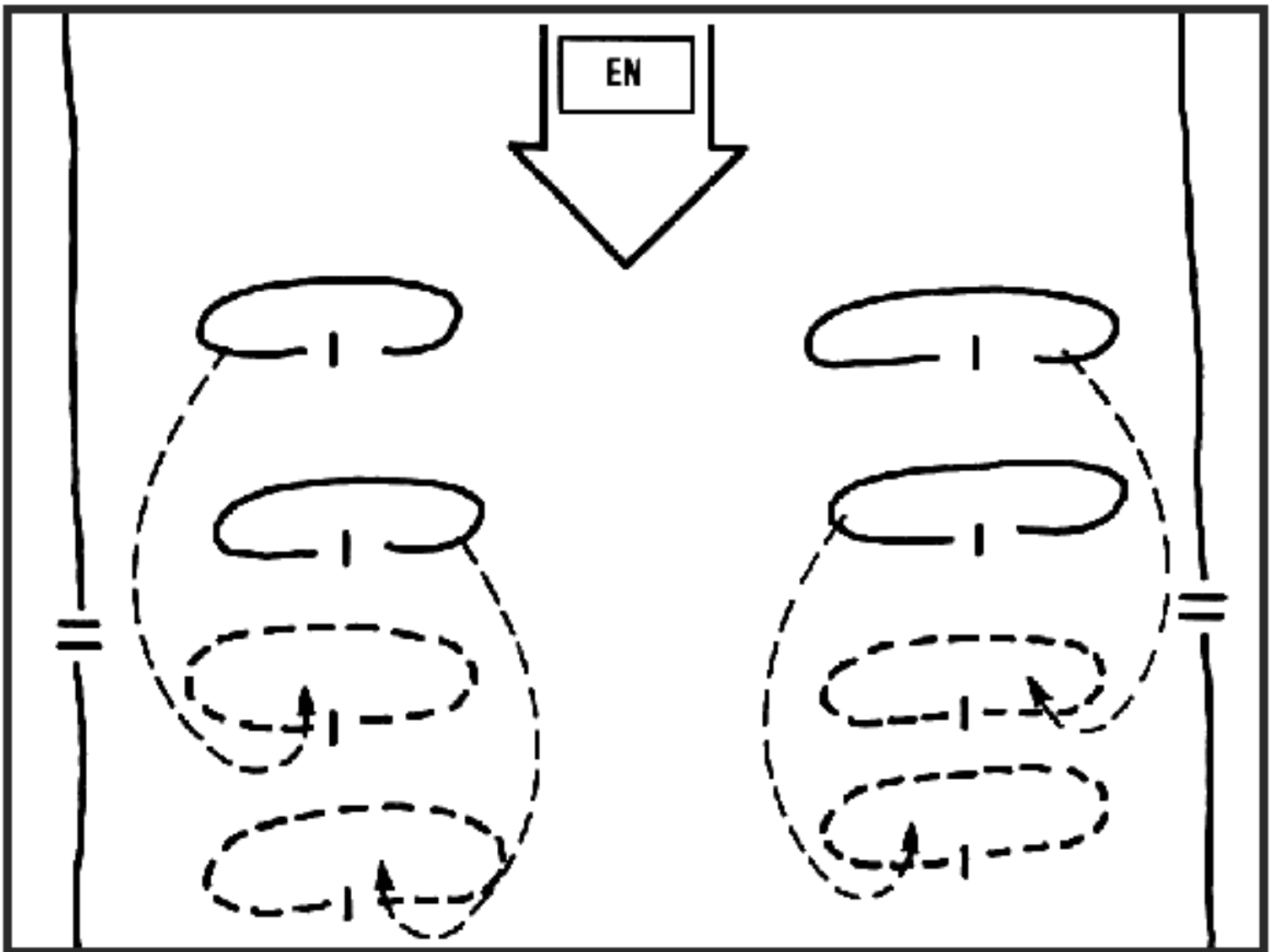


Figure 3-40. Delay on alternate positions.

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## CHAPTER 4

# EMPLOYMENT OF THE ANTIARMOR COMPANY

This chapter discusses the employment of the antiarmor company in mechanized infantry, airborne, and air assault divisions, and in the antiarmor battalions (separate) in the National Guard.

### Section I. ORGANIZATION AND POSITIONS FOR COMBAT

Command and control of the antiarmor company is exercised by the maneuver battalion commander through the company commander. The antiarmor company is the battalion commander's means to influence the battle without having to use tanks or infantry in a primarily antitank role. The antiarmor company frees both tanks and infantry from antitank missions and allows them to be employed to their best advantage. The company commander gives the battalion commander a single point of contact for controlling his massed antiarmor fires.

#### 4-1. TASK ORGANIZATION

a. Task organization involves the distribution of available assets to accomplish a mission. The task organization is based on the battalion commander's analysis of the factors of mission, enemy, terrain, troops and time available (METT-T), and his selection of a course of action.

b. The antiarmor company may be task-organized as a result of these considerations. The preferred choice is to leave the company intact under the control of the company commander. There may be some considerations, however, which dictate that one or more of the platoons be task-organized to other companies. This will be on a case-by-case basis. Some options for employing the company are:

- (1) Employ the company as organized without modification (preferred method).
- (2) Attach or place under OPCON one or more platoons to the battalion's rifle companies.
- (3) In rare instances, a mix of antiarmor platoons and maneuver platoons can be organized under the antiarmor company headquarters as an ad hoc maneuver unit. Situations that may warrant this are the need for additional flank security or a strong battalion covering force. The antiarmor company has limited support capabilities in terms of mess, supply, and recovery assets. It also has no FIST. Considerations for solving each of these limitations must be made when forming an ad hoc maneuver headquarters (least preferred method).
- (4) Elements of the company may be attached to an armor battalion in rare instances. Normally, this will occur only in defensive situations where TOW vehicles and tanks are positioned to bring the most effective combined fires on the enemy.

## 4-2. POSITIONS

One of the antiarmor company commander's biggest challenges in employing his company is to decide where to position his platoons on the battlefield. His decision must include an analysis of the terrain, measures to protect his weapons systems, and measures to ensure mutual support of his platoon.

a. Analyze Terrain. The first consideration in positioning the TOW system is to exploit every conceivable advantage offered by the terrain to optimize the armor-killing capabilities of the TOW in terms of range and accuracy.

(1) The antiarmor company commander must analyze all possible armor avenues of approach into the battalion sector. This analysis should also include all trafficable areas that provide cover and concealment, such as woods or draws for the enemy to use in countering the TOW. This analysis should be made from the enemy's point of view. For example, what size force can be deployed and controlled on the approaches and where are the positions that can be used for overwatch?

(2) Once the terrain has been analyzed from the enemy's perspective, the company commander then analyzes the terrain to identify potential armor kill zones. He looks at the terrain to select areas along the avenues of approach where the enemy will be most vulnerable to concentrated antiarmor fires. The areas selected will have a significant influence on how the battalion commander will deploy his forces in the defense. Therefore, the antiarmor company commander must be part of the initial estimate process with the battalion commander. The armor kill zones selected by the battalion commander may be forward of the FEBA, or may be within the main battle area. They also serve as a basis for the battalion commander to allocate supporting fires and the placement of obstacles and mines.

(3) The antiarmor company commander selects positions throughout the depth of the battle area from which his platoons will engage the enemy as he moves deeper into the main battle area. The positions selected must allow the TOW systems fields of fire into the kill zones along the avenues of approach. The goal is to be able to mass the company's fires into the kill zones while keeping the TOW systems dispersed in the battle area.

b. Protect the TOW Systems. To survive and contribute to the defense, the TOW systems must be positioned where they are protected from enemy direct fire and indirect fire and from mounted or dismounted assault.

(1) The positions must be on terrain that provides natural or man-made cover and concealment. In the defense, concealment is the primary means of surprising the enemy. When the scheme of defense is concealed, it is difficult for the enemy to coordinate his fires and the maneuver of his forces against specific targets. The use of fires from flanking positions and proper use of the TOW's standoff are excellent means of providing protection from enemy fires.

(2) Protection from mounted assaults is gained by positioning the TOW system on terrain that restricts the movement of vehicles. Restricted terrain includes such features as forested areas, marshy ground, steep slopes, or built-up areas. Engineer support may be available to improve fields of fire or to create or improve obstacles.

(3) Defense of the TOW systems from dismounted infantry attack can be achieved by several means. One is to position infantry elements with the antiarmor squads or sections. Another is to position infantry along avenues of approach leading to the TOW positions. A third method is to reposition reserve or uncommitted forces to counter dismounted attacks after they have been discovered.

c. Provide Mutual Support. Mutual support provides a degree of protection for weapons and crews by ensuring complete, continuous coverage of kill zones and avenues of approach.

(1) TOWs are employed so that their fires interlock with the fires of other TOWs and other antiarmor weapons systems (tanks, Dragons, LAWs).

(2) TOWs are positioned so that their fires can engage enemy armored vehicles assaulting other TOW positions.

d. Minimize Vulnerability. The antiarmor company commander takes the following steps to minimize vulnerability to enemy suppressive fires.

(1) Avoids positioning platoons on easily targeted terrain features.

(2) Designates on-order platoon positions throughout the battle area to aid in quickly redeploying platoons once they have been targeted.

(3) Selects positions masked by terrain from which to fight.

(4) Enforces use of camouflage, concealment, and OPSEC.

(5) Plans movement to subsequent positions on covered routes.

(6) Plans to use smoke on and to suppress likely enemy overwatch positions.

e. Identify Disengagement Points. In addition to selecting primary and alternate positions for his platoons, the company commander must also identify disengagement points for his platoons.

(1) Disengagement points are selected by the commander so that he knows when to order his platoons to move to their next positions. The location of the disengagement point for each platoon will be based on the Threat and the terrain.

(a) If the commander wants his platoons to displace before they are in tank range or BMP range, then he must determine where the Threat will be when he orders the platoons to move.

(b) If the terrain is open and unrestricted, the disengagement point will have to be farther out to allow the platoons time to displace. Conversely, if there are existing or reinforcing obstacles in front of the platoon position, the disengagement point can be closer.

(2) The company commander must establish rules for disengagement if communications are lost. For example, the platoon and squad leaders could be told to displace, with or without orders, when the enemy reaches a certain point on the ground.

(3) Disengagement from terrain-masked positions is simplified because units are protected to their front from enemy direct-fire weapons. Under any circumstances, smoke should be



used to conceal movement.

(4) The company commander should have his platoons rehearse the disengagement to ensure all squads know where to go and the route to use. Rehearsals also give the soldiers a better understanding of how the battle will be fought.

f. Engage the Enemy from the Flank. Frontal fire must be avoided.- It attracts attention and is therefore deadly. In addition to firing from the flank, the weapon should be sited so that it is in defilade from the enemy's direction. Concealment of the launch signature is also essential, not only from trailing tanks, but also from overwatch forces.

## Section II. FIRE CONTROL

The control of fires against an attacking armored force is of paramount importance, because the antiarmor company forms the backbone of the battalion's defense. See [Chapter 3, Section IV](#), for fire control measures. This section discusses the company commander's role.

### 4-3. COORDINATION OF COMPANY FIRES

The company commander coordinates the fires of his platoons with other fires as planned by the battalion commander. To do this, he gives his platoon leaders the following:

- a. **Platoon Positions on the Battlefield.** The company commander gives each platoon its initial position, and any subsequent positions, if applicable. The platoon positions are selected based on the commander's concept of how he intends to integrate the fires of his platoons. Initial positions are selected that give the platoons fields of fire into engagement areas or sectors of fire assigned by the company commander. Subsequent positions are picked for the platoons to allow them to continue to fire into an engagement area if they are driven off their primary position by enemy actions. Subsequent positions are also used to reposition platoons to fire into other engagement areas or sectors.
- b. **Primary Sector of Fire.** The company commander gives each platoon a sector of fire to cover from its primary position.
- c. **Secondary Sector of Fire.** The company commander assigns platoons secondary sectors of fire to reinforce the fires of another platoon. Fire is shifted to the secondary sector, on order, if there are no targets in the primary sector or to cover another platoon if that platoon is forced to move.
- d. **Engagement Areas.** Engagement areas represent the company commander's primary means of massing the fires of his platoons into one target area. Engagement areas may be divided into sectors of fire by the use of TRPs. (See [Chapter 3, Section IV](#).)
- e. **Target Reference Points.** The company commander designates TRPS to identify targets and distribute the fires of his platoons. Since platoons will be engaging from different directions, compass points (north, south), rather than left or right, are used when giving directions centered on a TRP. (See [Chapter 3, Section IV](#).)

### 4-4. ENGAGEMENT PRIORITIES

Usually, targets that appear in armor formations will consist of varying types--tanks, APCs, air defense weapons, and artillery. Fires from platoons can be rapidly and effectively distributed by assigning each platoon a particular type of target to engage first. (See [Chapter 3, Section IV.](#))

#### **4-5. PRINCIPLES OF FIRE CONTROL**

Often there is no time to give subordinates detailed instructions. Reliable standard procedures must be established for distributing fires. These procedures and subordinates' initiative must be relied on during the first few minutes of battle. Then, when time permits, fires can be redistributed as needed. The following principles are the basis for fire control procedures.

- a. **Cover Targets.** Fires from antiarmor weapons should be distributed so that all targets are covered. Distribution saves ammunition and increases the number of kills by antiarmor weapons.
  - b. **Avoid Target Overkill.** A unit cannot afford to engage one target with more than one weapon. Strive for one-on-one engagement and one-shot kills.
  - c. **Fire First, Fast.** Accuracy is important in battle, but firing accurately and first is most important. When opponents with similar weapon capabilities fight, the side firing first greatly increases its chances of winning. When friendly units see the enemy without being seen, they can choose the best moment to fire. Fire placed in the enemy's area will lessen his effectiveness and give friendly weapons time to adjust. Continue to engage the enemy as rapidly as possible.
  - d. **Destroy the Most-Dangerous Target First.** Target danger varies with range, terrain, and type of target. For example, at a range of 600 meters, tanks may be more dangerous than an ATGM. If all targets cannot be engaged, suppress some and destroy the rest.
  - e. **Maintain Basic Loads as Long as Possible.** Ammunition is easier to use than to resupply. Without proper fire discipline and coordination, a unit can use its entire basic load in one engagement, and then be ineffective in later encounters. Keep a constant check on the unit's ammunition supply. The ammunition level at which each element must be resupplied should be established by SOP but should be frequent. A unit should not drop below this level except in an emergency or for self-protection.
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# CHAPTER 5

## EMPLOYMENT OF THE SEPARATE ANTIARMOR BATTALION

This chapter discusses how the separate antiarmor battalion should be employed on the battlefield. The employment techniques in this chapter concern the effective use of the antiarmor battalion units within the framework of combined arms missions and capabilities.

### 5-1. FUNCTIONS

- a. The separate antiarmor battalion provides heavy, reinforcing antitank fires to maneuver units. It is a corps asset whose subunits are usually attached to divisions or brigades, depending on where they are needed most. A corps commander will usually attach the entire battalion to a division. The division commander may then further attach the antiarmor companies to his maneuver brigades or battalions. The antiarmor companies are then employed by the units to which they are attached.
- b. The separate antiarmor battalion gives the supported maneuver commander maximum flexibility. It is equipped with M151 's and M966's and can therefore move rapidly by road or cross-country to critical points on the battlefield.

### 5-2 . COMMAND AND STAFF RELATIONSHIPS

The separate antiarmor battalion differs significantly from other battalions in that it is not designed or equipped to conduct extended combat operations as a battalion. The command relationship between the companies of the antiarmor battalion and the maneuver units they support is usually that of attachment. This is because of the antiarmor battalion's limited CSS capability. This attachment makes the functions of the antiarmor battalion commander and his staff much different than those of his supported maneuver unit counterpart.

- a. Battalion Commander. Normally, the antiarmor battalion commander's subordinate units are attached to maneuver units. They respond to the maneuver unit's orders, plans, and support; therefore, the antiarmor battalion commander will rarely exercise command and control in a tactical situation. He advises the maneuver unit on the employment of his antiarmor companies. He must ensure that his soldiers are trained to their full potential, and he must understand the weapon system to ensure that it is properly employed. He further ensures this by supervising the coordination efforts of his staff so that services provided by the supported unit are sufficient to accomplish the mission.

- (1) When the battalion is ordered to move to a new area of combat, the battalion commander must coordinate the detachment of his companies from the former supported units, move to

the new area by road march, and coordinate with the new supported unit commander.

(2) The battalion commander works with the supported unit commander to assist in integrating the antiarmor companies into the scheme of maneuver and fires.

(3) He must ensure the rapid, smooth transition of his companies from one unit of attachment to another. To do so, he ensures his companies know where to go, who to report to, and have a general idea of the new mission.

#### b. Battalion Staff.

(1) The antiarmor battalion staff assists the commander in his advisory, support, and coordination efforts. The primary function of the staff officers is supervising training, control, and administrative deployment of the subordinate units. Due to the limited CSS assets, and the resulting dependence on the maneuver units for support, staff officers act as coordinators and liaison officers. The major limitation of the staff is its inability to conduct sustained 24-hour combat operation because of the limited number of personnel within various staff sections.

(2) The staff continuously plans for the detachment, consolidation, and attachment of the battalion or any of the companies. The battalion staff normally exercises its coordination and liaison function by satelliting with the appropriate general staff member. This does not mean that the antiarmor battalion staff officer is an augmentation to the general staff to be added to the duty roster. He has a specific function and must be assisted by the general staff in accomplishing his mission.

(3) The staff consists of the following officers:

(a) Intelligence/operations officer. The S2/S3 is the senior staff member. He helps the commander ensure coordinated and complete staff actions. He may assist the battalion commander in advising and assisting the supported commander in the employment of the companies. In the absence of the commander, he assumes control of the battalion. He also makes the initial coordination efforts for the movement of the battalion.

(b) Adjutant. The S1 ensures that the administrative support for the battalion is coordinated with the maneuver unit. The battalion depends on the supported maneuver unit for personnel, administrative, finance, chaplain, and medical support.

(c) Supply officer. The S4 for the battalion coordinates maintenance, ammunition resupply, food service, and other supply requirements for the antiarmor battalion.

### 5-3. MAINTENANCE

The antiarmor battalion has a maintenance detachment that normally augments the division support command (DISCOM) of the division to which the battalion is attached. The battalion does not have the capability for recovery or evacuation. It is restricted to operator maintenance on vehicles. The companies of the battalion depend on DISCOM or corps support command (COSCOM) (as augmented by the battalion maintenance team) for all wire-guided missile maintenance.

### 5-4. SUPPLY

The antiarmor battalion does not have a support platoon. Each company has two 5-ton trucks and one 5-ton petroleum, oil, lubricants (POL) truck. Therefore, ammunition and POL resupply require precise coordination with the supported unit. Resupply of ammunition and POL is a critical function that must be ensured by the supported maneuver unit.

## 5-5. CAPABILITIES AND LIMITATIONS

- a. The antiarmor battalion provides heavy antitank fires on the battlefield. It is unique in organization and concept, and can quickly deploy to many theaters to provide maneuver units with direct antitank fires.
- b. As with other TOW organizations, antiarmor battalion weapons systems provide high-target hit probability at long ranges. With the antiarmor battalions, however, maximum range is limited to 3,000 meters because they do not have TOW 2 systems or thermal sights at this time. The antiarmor battalion also has all the limitations inherent to the TOW system as follows:
  - (1) Long time of flight.
  - (2) Large firing signature.
  - (3) Slow rate of fire.
  - (4) Requires line of sight to target.
- c. In addition, the antiarmor battalions lack armor protection because they are mounted on light wheeled vehicles. They are vulnerable to both direct and indirect fires. This requires special consideration. Commanders must employ them initially from positions where indirect fires are not likely to be planned, and then move them as required to avoid engagement by indirect fires.

## 5-6. EMPLOYMENT GUIDELINES

There are employment guidelines to follow when task-organizing with the separate antiarmor battalion. The corps commander directs the attachment of the battalion to reinforce the division (or divisions) on the corps' main armor avenue of approach. Ideally, the battalion is attached as a whole to a division. The battalion can then be suballocated by attaching the companies to brigades or down to battalion task force level. The antiarmor companies are best employed as a whole. They offer massive, coordinated antiarmor firepower under one commander. The separate antiarmor company is organized as follows:

- a. The company headquarters has headquarters, maintenance, communications, supply, and reconnaissance and security sections. The company headquarters section commands and controls the tactical deployment of the three organic platoons. It has an XO, first sergeant, communications chief, and radiotelephone operator to assist the company commander in performing his mission.
- b. The reconnaissance and security section has three squads. Each section is equipped with two M966's, pedestal-mounted M60 machine guns, and radios. The reconnaissance and security section reconnoiters routes and primary, alternate, and supplementary TOW firing positions. It also maintains liaison with supported and adjacent unit commanders.
- c. The supply section has a supply sergeant, armorer, and two ammunition specialists. This section uses two 5-ton trucks with 1«-ton trailers for ammunition resupply and one 5-ton for POL

resupply. Because the antiarmor company may be employed over a large area, the commander, assisted by the S4, must coordinate for additional resupply requirements.

d. The maintenance section provides wheeled-vehicle mechanics and one communications-electronics equipment mechanic for organizational maintenance support. The antiarmor company, however, is entirely dependent on DISCOM or COSCOM (as augmented by the separate antiarmor battalion maintenance team) for all wire-guided missile maintenance support.

## 5-7. COORDINATION WITH SUPPORTED UNITS

a. The separate antiarmor battalion is only employed in attachment. This means that the unit to which antiarmor battalion units are attached is responsible for command and control, administration, and logistics support. The antiarmor battalion depends on the unit to which it is attached for all ammunition, POL, repair parts, rations, medical treatment, replacement personnel, and pay.

b. All antiarmor battalion unit leaders must coordinate continuously with the leaders of the supported unit to ensure proper employment and resupply. Specifically, the antiarmor unit leader must discuss--

(1) His unit's capabilities and limitations.

(2) Recommendations for integrating his TOW assets into the overall antiarmor system.

- In defensive operations.
- In offensive operations.
- In retrograde operations.

(3) Resupply.

- Ammunition
- POL.
- Food and rations.

(4) Maintenance and administration.

c. As tactical operations progress and antiarmor battalion units are moved about the battlefield from one maneuver unit to another, the battalion staff, company commanders, XOs, and platoon leaders must keep track of their subunits at all times.

## 5-8. TACTICAL EMPLOYMENT

The companies and platoons of the separate antiarmor battalions are employed as described in [Chapters 3](#) and [4](#) of this manual.

## 5-9. COMBAT SERVICE SUPPORT

The antiarmor battalion (separate) is not designed or equipped to conduct extended combat operations by itself. The battalion companies will be detached from the battalion and attached to other units (division,

brigade, battalion) for combat operations. When attached to maneuver units, the companies depend almost entirely on the supported unit for combat service support.

- a. **Maintenance.** The companies of the separate antiarmor battalions can perform organizational maintenance on wheeled vehicles and communications-electronics equipment. Vehicle maintenance is limited to using the light mechanics tool kit. Maintenance requirements beyond the capability of company personnel becomes the responsibility of the maneuver unit.
- b. **Evacuation of Disabled Vehicles or Equipment.** Disabled vehicles or equipment that cannot be repaired by the operator or company maintenance personnel will be evacuated by the supported unit to its unit maintenance collection point (UMCP). If the item cannot be repaired at battalion level, the supported unit evacuates it to the next level of maintenance support.
- c. **Weapons.** Organizational maintenance of weapons is accomplished by operators and crew or by armorers from the supported battalion. If this is not possible, the supported battalion evacuates the weapon to the next level of maintenance support. Wire-guided missile maintenance support is provided by maintenance augmentation teams from the separate antiarmor battalion, which are attached to the appropriate DISCOM or COSCOM.
- d. **Rations.** Rations and water are supplied by the supported unit. The antiarmor companies have no capability to prepare their own rations.
- e. **POL.** Each antiarmor company has one 5-ton POL truck. However, the company must get its resupply from the supported unit's POL sources.
- f. **Ammunition.** Each company has two 5-ton trucks specifically for ammunition resupply. The company must operate within the supported unit's ammunition resupply system. This means that the company obtains its missiles and other ammunition from the same source as the supported unit.
- g. **Repair Parts.** Repair parts are obtained through the supported unit.

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# APPENDIX A

## ORGANIZATIONS

In response to the tank and motorized threat of our potential enemies, all infantry and mechanized battalions are equipped with one or more antiarmor platoons or an antiarmor company. While these infantry antiarmor units are different in organization and in some equipment, they are all equipped with the TOW weapon system. Antiarmor units are currently organized under both the H-edition and L-edition TOE. This appendix discusses typical organizations for both tables.

### A-1. ANTIARMOR BATTALION (SEPARATE)

The antiarmor battalion has a headquarters detachment and five antiarmor companies with twelve M996-mounted TOWs each ([Figure A-1](#)). Its headquarters is not staffed or equipped to function as a tactical control element; therefore, it is employed by the attachment of companies to the supported maneuver units.

[Figure A-1](#). Antiarmor battalion (separate).

a. Headquarters and Headquarters detachment. The HHD accomplishes command, staff planning, and supervision of operations (other than tactical employment) of organic units of the battalion. (See [Figure A-2](#).) It has limited administrative, supply, food service, medical, and maintenance capability. The antiarmor battalion depends on the supported unit, as augmented by those limited capabilities, for virtually all combat service support. The company maintenance teams augment the direct support maintenance unit and assist in repair of vehicles and missile systems. These teams are not kept under antiarmor battalion control but are attached to the direct support maintenance unit for as long as the antiarmor battalion is attached to that division or corps.

[Figure A-2](#). Headquarters and headquarters detachment, antiarmor battalion (separate).

b. Antiarmor Company. The antiarmor company is organized with a company headquarters and three antiarmor platoons ([Figure A-3](#)). The antiarmor company headquarters provides command and control of the tactical employment of the three organic platoons. The scout section reconnoiters TOW firing positions and routes between positions. It consists of three squads mounted in M151's with M60 machine guns. It is also used to perform liaison. The supply section, in addition to other supply needs, is equipped with two 5-ton trucks with 1«-ton trailers and one 5-ton truck with tank and pump unit. They provide some ammunition and fuel hauling capability for the company. The maintenance section can provide limited automotive and communications equipment maintenance support; however, it has no vehicle recovery capability.

[Figure A-3](#). Antiarmor company, antiarmor battalion (separate)



## A-2. ANTIARMOR COMPANY, INFANTRY AND MECHANIZED BATTALIONS (L-EDITION)

Infantry and mechanized battalions organized under the L-edition TOE have an organic antiarmor company. The infantry battalion (air assault and airborne) and mechanized variations of this antiarmor company are shown in [Figures A-4](#) and [A-5](#). The headquarters of both of these companies controls the tactical employment of their platoons. Unlike the mechanized variation, the air assault and airborne antiarmor companies have five platoons. The antiarmor company depends on its parent battalion for CS and CSS.

[Figure A-4](#). Antiarmor company, air assault and airborne battalions.

[Figure A-5](#). Antiarmor company, mechanized battalions (L-edition)

## A-3. ANTIARMOR PLATOON, INFANTRY BATTALION (H-EDITION)

Infantry battalions organized under the H-edition TOE have nine antiarmor sections within the combat support company. These sections are organized into three platoons of three sections each ([Figure A-6](#)).

[Figure A-6](#). Antiarmor platoon, infantry battalion (H-edition).

## A-4. ANTIARMOR PLATOON, LIGHT INFANTRY BATTALION

The battalions of the light infantry division have one antiarmor platoon consisting of two sections of two TOW systems each ([Figure A-7](#)).

[Figure A-7](#). Antiarmor platoon, light infantry battalion.

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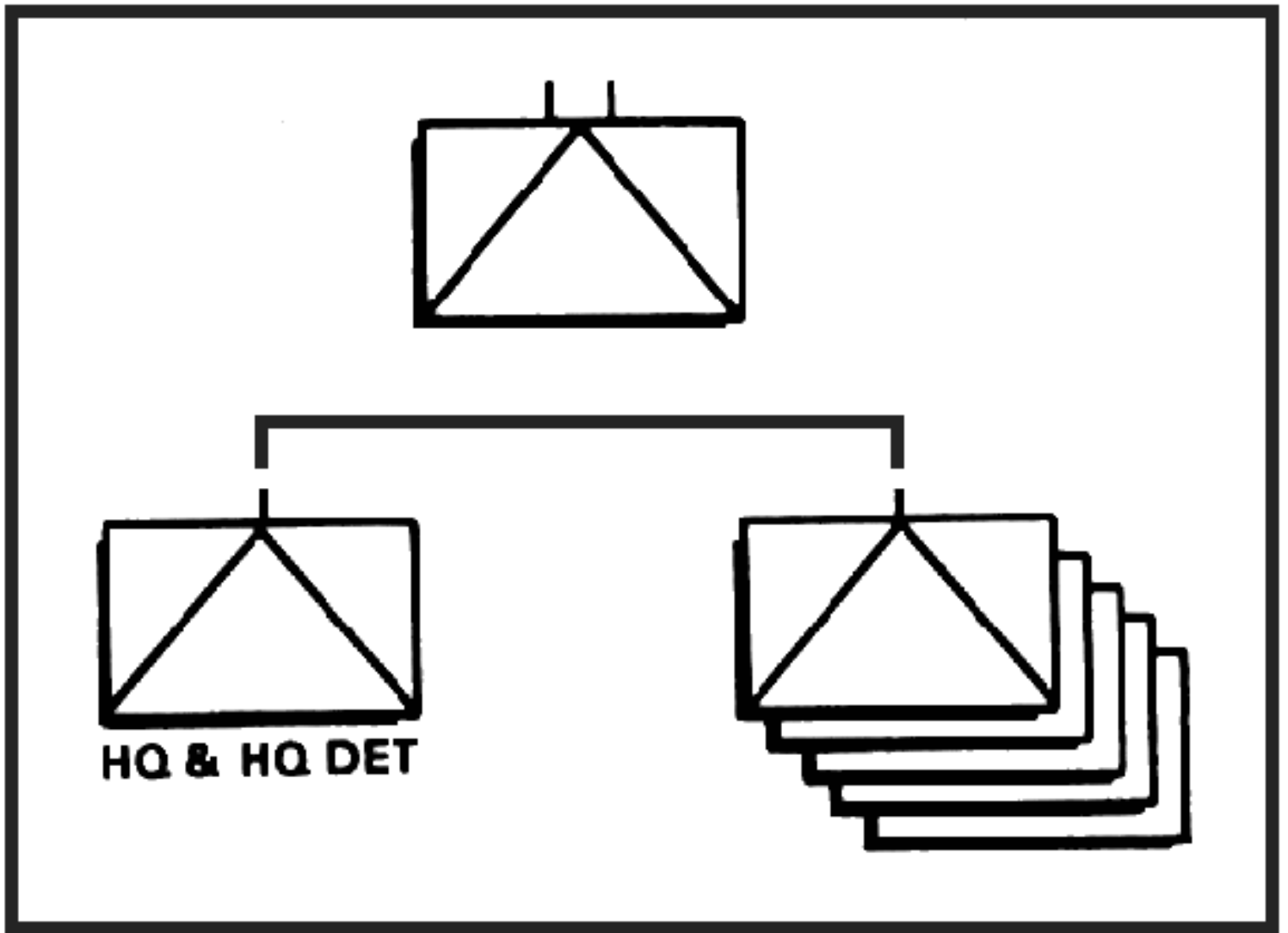


Figure A-1. Antiarmor battalion (separate).

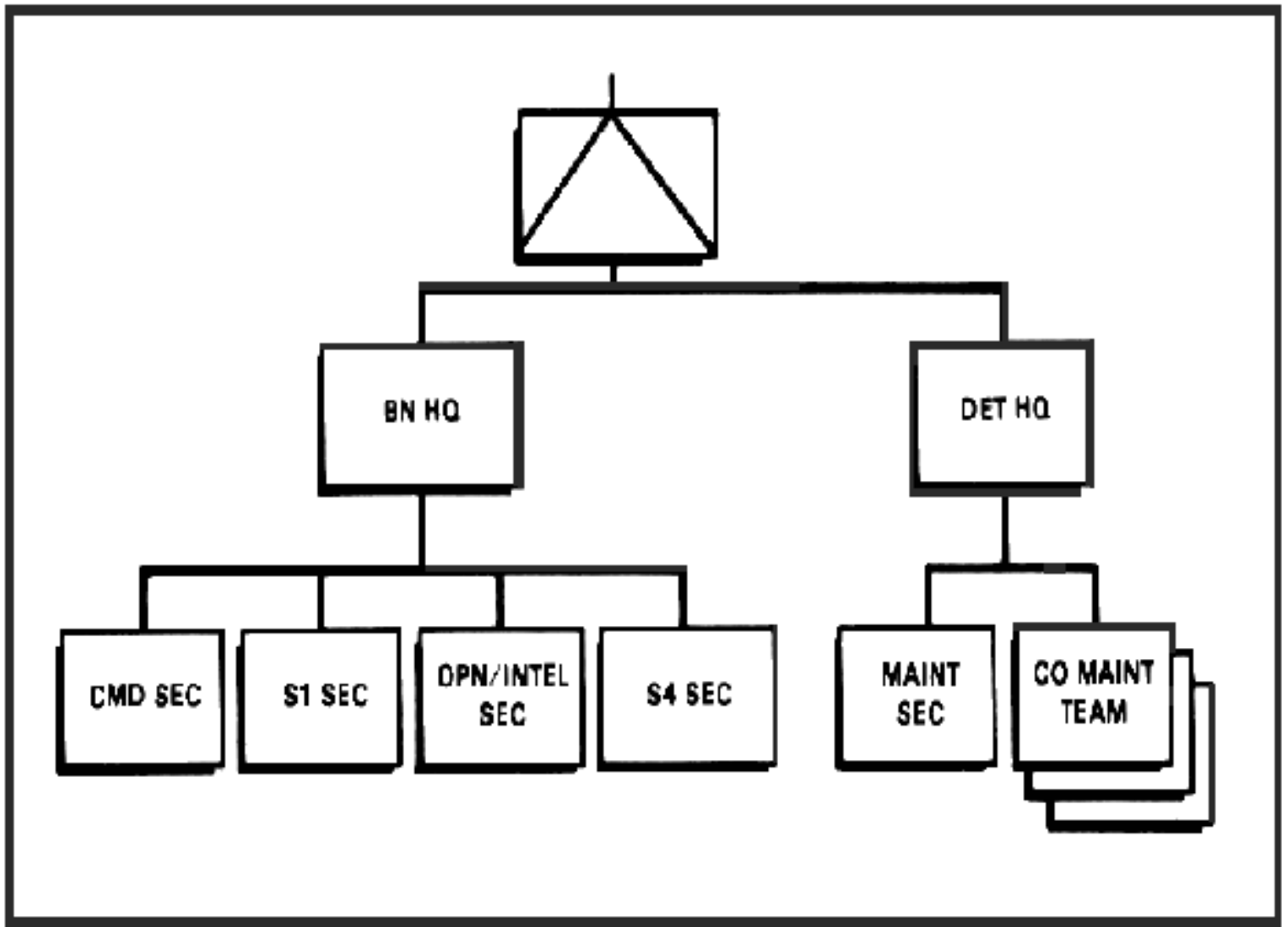


Figure A-2. Headquarters and headquarters detachment, antiarmor battalion (separate).

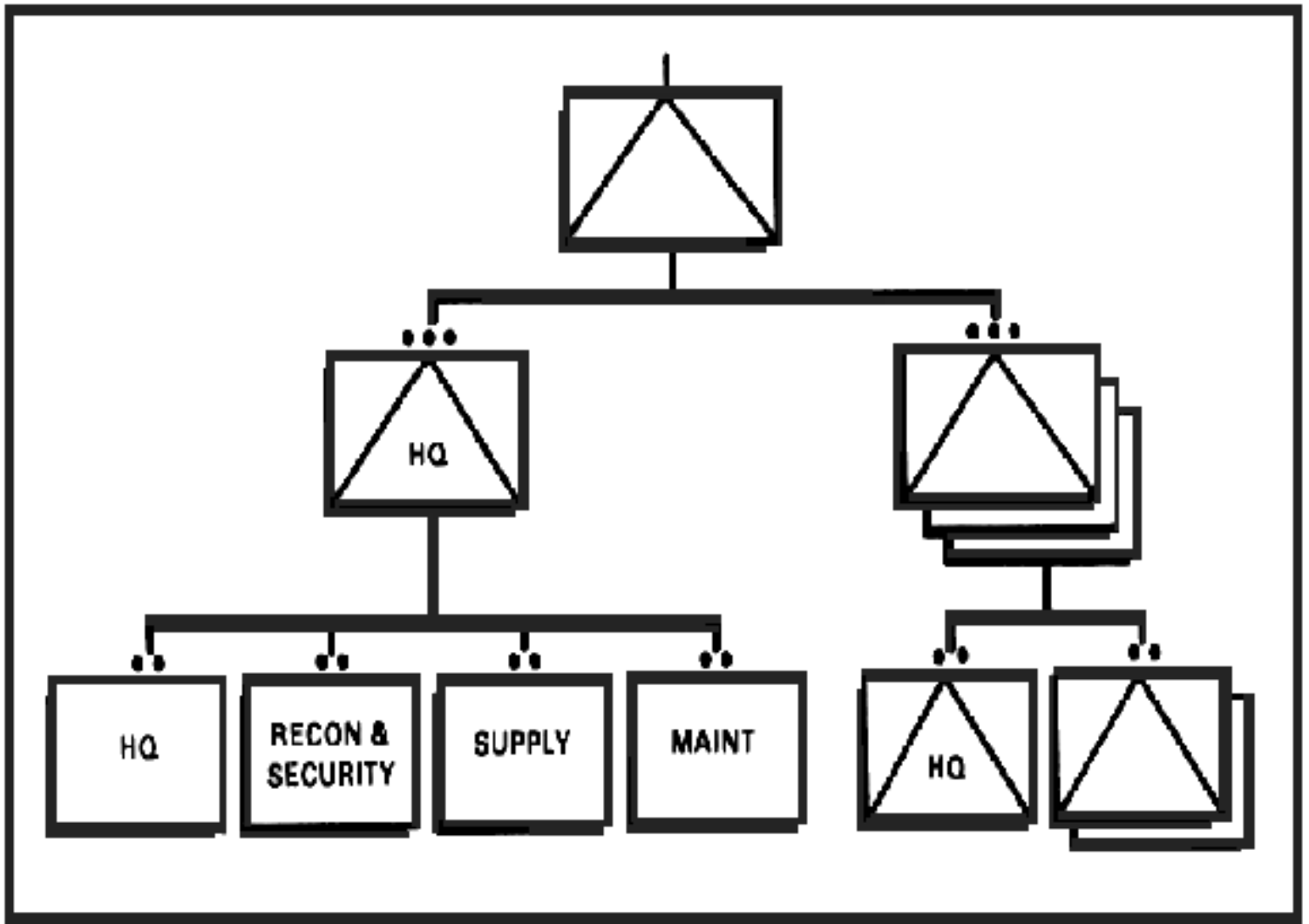


Figure A-3. Antiarmor company, antiarmor battalion (separate).

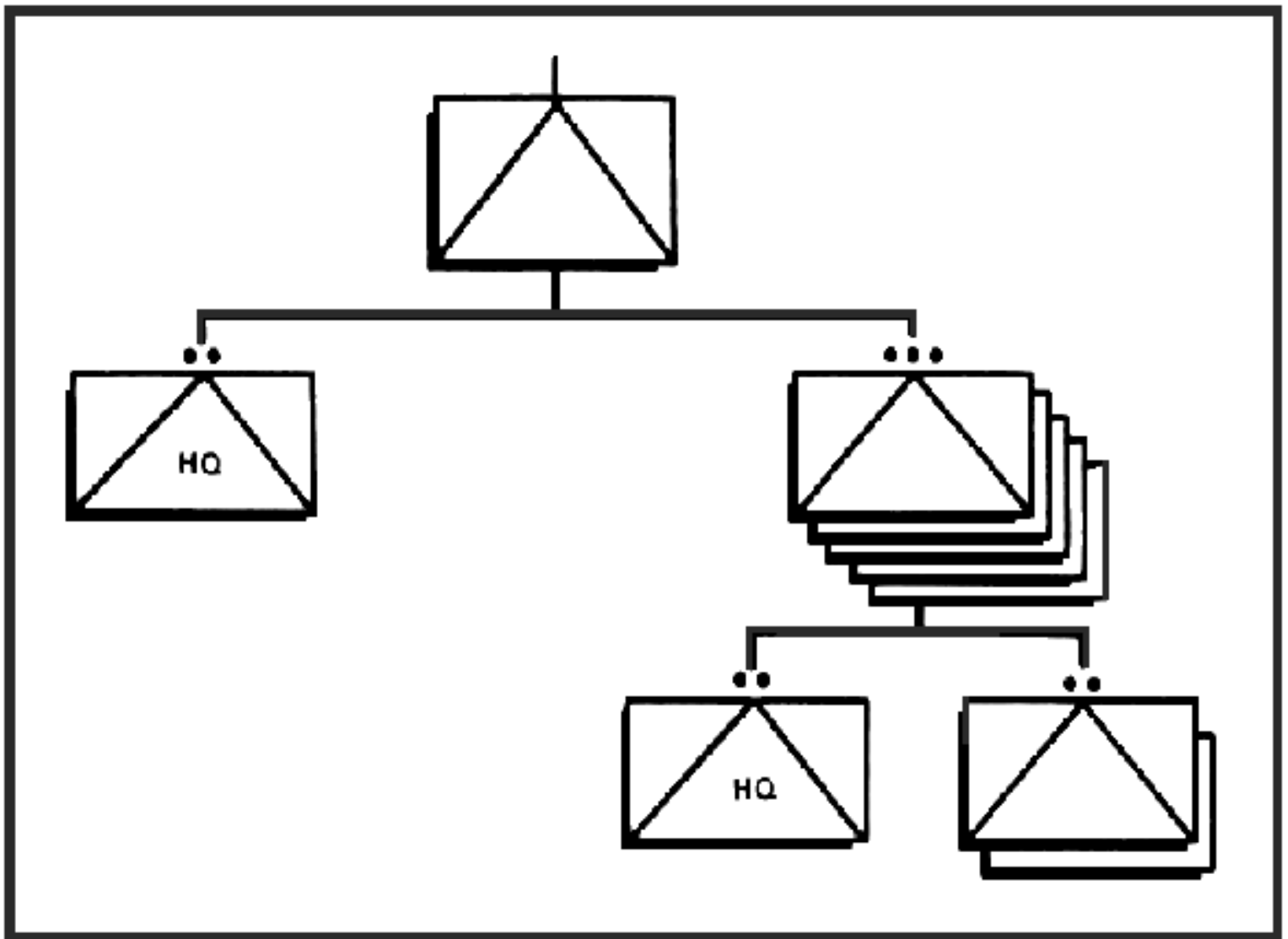


Figure A-4. Antiarmor company, air assault and airborne battalions.

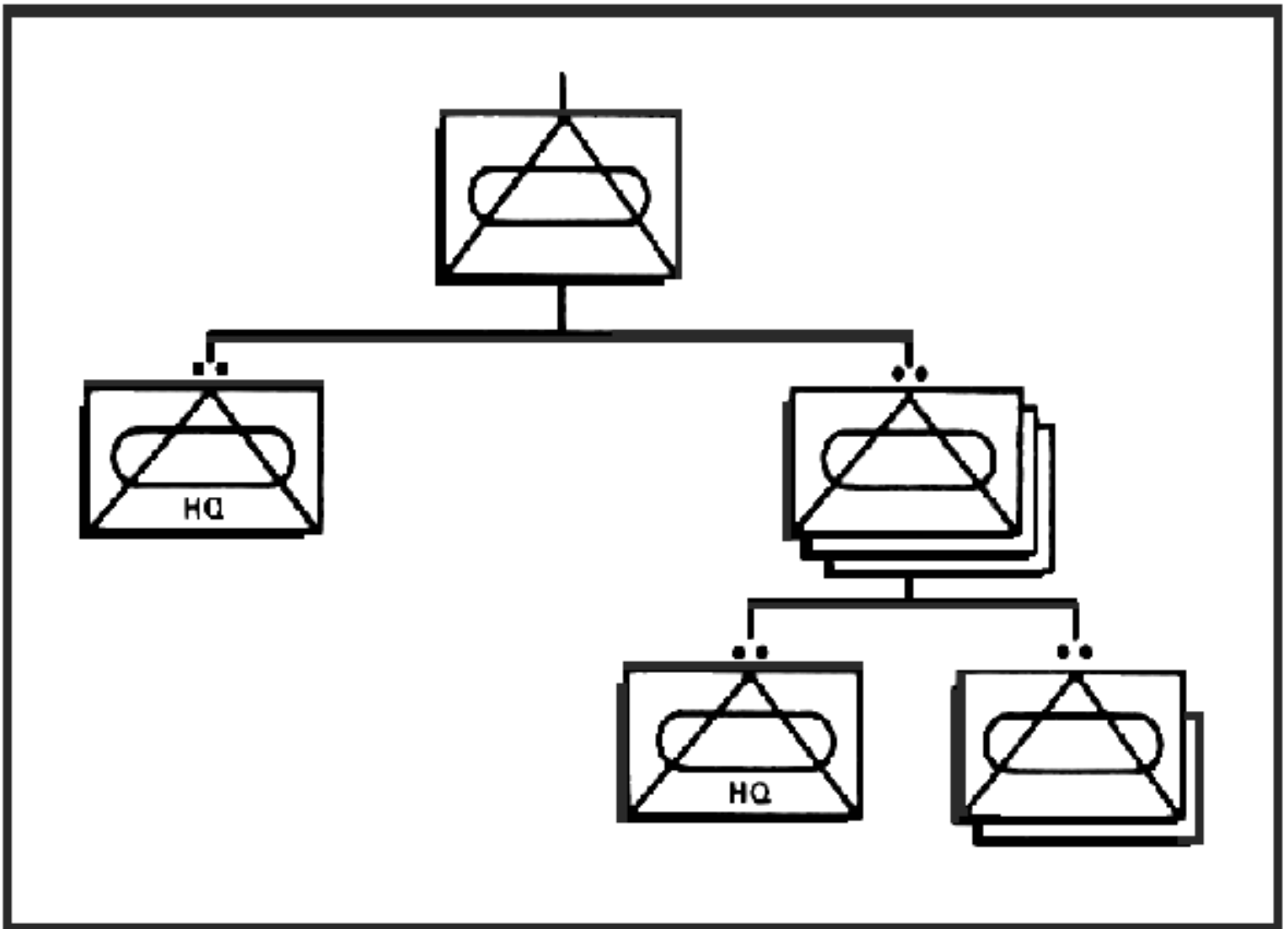


Figure A-5. Antiarmor company, mechanized battalions (L-edition).

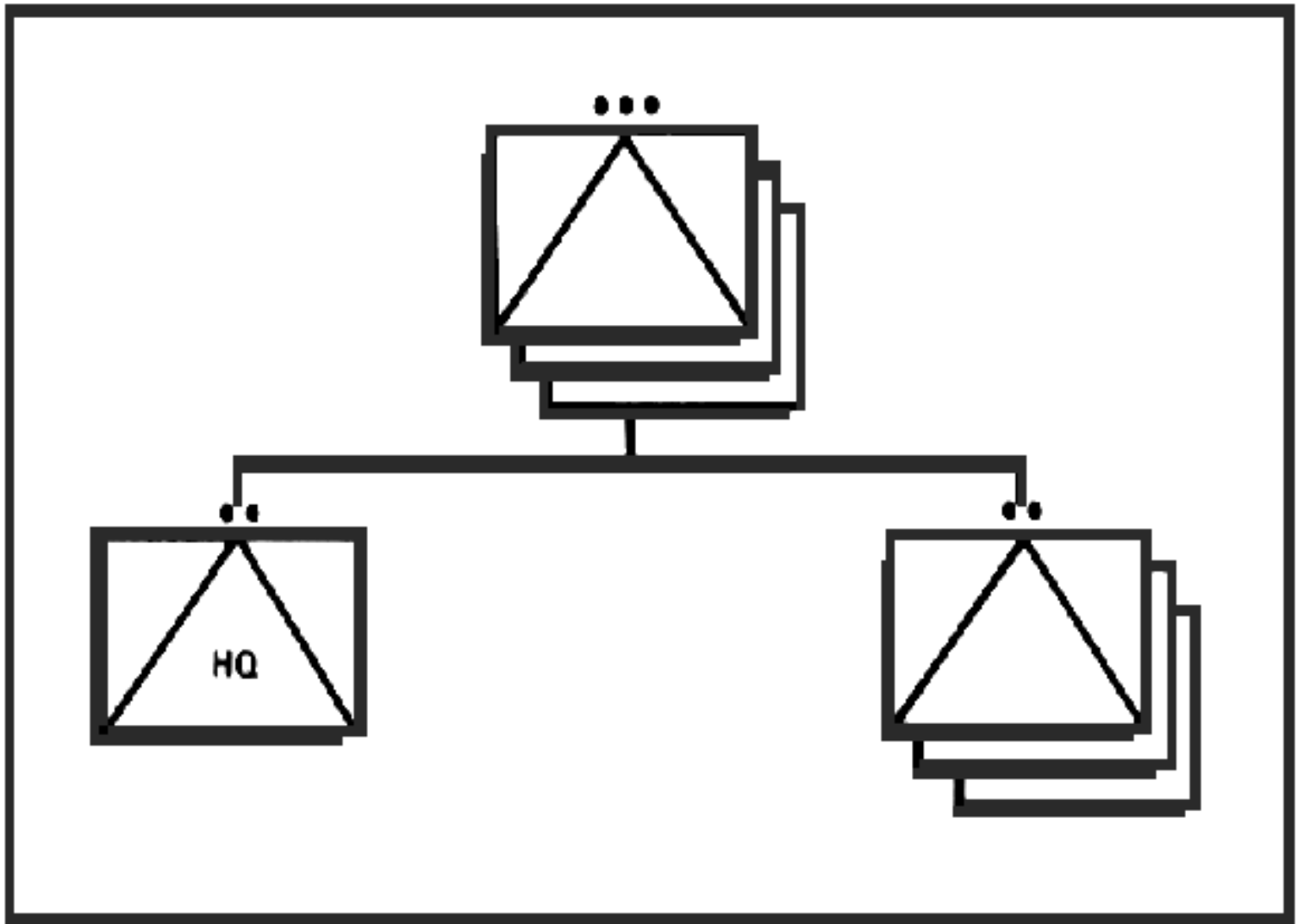


Figure A-6. Anitarmor platoon, infantry battalion (H-edition).

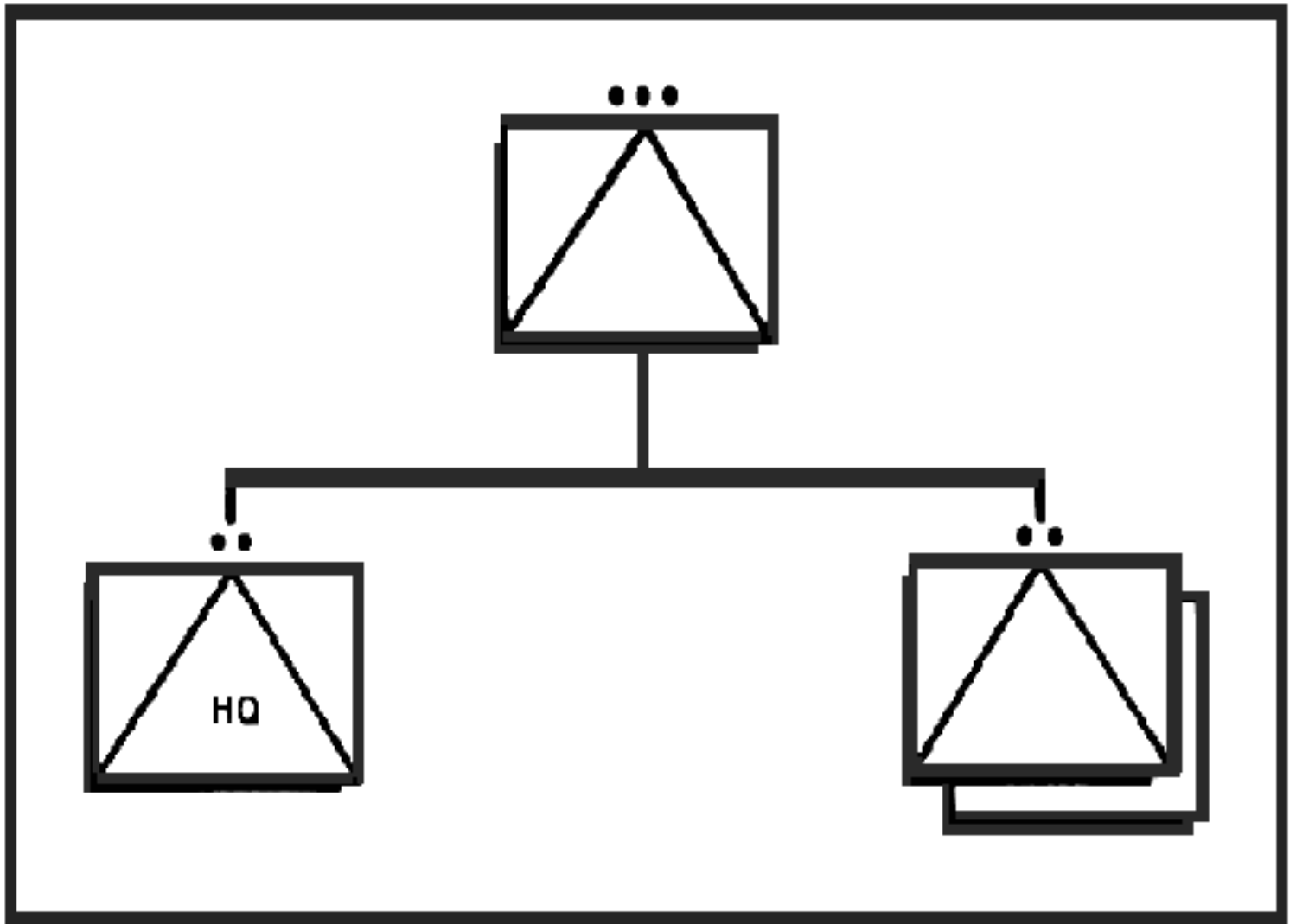


Figure A-7. Antiarmor platoon, light infantry battalion.



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# GLOSSARY

## Acronyms and Abbreviations

<b>APC</b>	armored personnel carrier
<b>ATGM</b>	antitank guided missile
<b>az</b>	azimuth
<b>BMP</b>	(a Threat fighting vehicle)
<b>bn</b>	battalion
<b>BRDM</b>	(a Threat scout car)
<b>BTR</b>	(a Threat vehicle)
<b>CAS</b>	close air support
<b>CEOI</b>	communications-electronics operation instructions
<b>cmd</b>	command
<b>co</b>	company
<b>COSCOM</b>	corps support command
<b>CS</b>	combat support
<b>CSS</b>	combat service support

<b>DA</b>	Department of the Army
<b>det</b>	detachment
<b>DISCOM</b>	support command
<b>DLIC</b>	detachment left in contact
<b>DPICM</b>	dual-purpose improved conventional munition
<b>FEBA</b>	forward edge of the battle area
<b>FIST</b>	fire support team
<b>FLOT</b>	forward line of own troops
<b>FM</b>	field manual
<b>FO</b>	forward observer
<b>GSR</b>	ground surveillance radar
<b>GTA</b>	graphic training aid
<b>HE</b>	high explosive
<b>HHD</b>	headquarters and headquarters detachment
<b>hq</b>	headquarters
<b>hwy</b>	highway
<b>inf</b>	infantry

<b>ITV</b>	improved TOW vehicle
<b>LAW</b>	light antitank weapon
<b>LD</b>	line of departure
<b>m</b>	meter
<b>maint</b>	maintenance
<b>max</b>	maximu
<b>MBA</b>	main battle area
<b>METT-T</b>	mission, enemy, terrain, troops and time available
<b>mm</b>	millimeter
<b>OP</b>	observation post
<b>OPCON</b>	operational control
<b>opn</b>	operations
<b>OPORD</b>	operation order
<b>OPSEC</b>	operations security
<b>PL</b>	phase line
<b>POL</b>	petroleum, oil, lubricants
<b>recon</b>	reconnaissance
<b>REMBASS</b>	Remotely Monitored Battlefield Sensor System

<b>S1</b>	adjutant
<b>S2</b>	intelligence officer
<b>S3</b>	operations and training officer
<b>S4</b>	supply officer
<b>sec</b>	section
<b>SOP</b>	standing operating procedure
<b>tgt</b>	target
<b>TOC</b>	tactical operations center
<b>TOE</b>	table of organization and equipment
<b>TOW</b>	tube-launched, optically tracked, wire-guided
<b>TRADOC</b>	United States Army Training and Doctrine Command
<b>TRP</b>	target reference point
<b>UMCP</b>	unit maintenance collection point
<b>US</b>	United States (of America)
<b>XO</b>	executive officer

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# REFERENCES

## REQUIRED PUBLICATIONS

Required publications are sources that users must read in order to understand or to comply with this publication.

### Field Manuals (FMs)

[FM 6-20](#) Fire Support in Combined Arms Operations

[FM 7-20](#) The Infantry Battalion (Infantry, Airborne and Air Assault)

[FM 23-34](#) TOW Weapons Systems

### Soldier Training Publications (STPs)

STP 7-11H1-SM Soldier's Manual: Heavy Antiarmor Weapons Infantryman MOS 11H (Skill Level 1)

STP 7-11H24-SM Soldier's Manual: 11H Heavy Antiarmor Weapons Infantryman (Skill Level 2/3/4)

## RELATED PUBLICATIONS

Related publications are sources of additional information. They are not required in order to understand this publication.

### Field Manuals (FMs)

[FM 5-103](#) Survivability

[FM 90-10-1](#) (HTF) An Infantryman's Guide to Urban Combat (How to Fight)

FM 100-2-1                    The Soviet Army, Operations and Tactics

FM 100-2-2                    The Soviet Army, Specialized Warfare and Rear  
Support Area

FM 100-2-3                    The Soviet Army, Troops, Organization, and Equipment

**Graphic Training Aids (GTAs)**

[GTA 17-2-13](#)                    Armored Vehicle Recognition

**PROJECTED PUBLICATIONS**

Projected publications are sources of additional information that are scheduled for printing but are not yet available. Upon print, they will be distributed automatically via pinpoint distribution. They may not be obtained from the USA AG Publications Center until indexed in DA Pamphlet 25-30.

**Field Manuals (FMs)**

[FM 71-1](#)                        The Tank and Mechanized Infantry Company Team

[FM 71-2](#)                        The Tank and Mechanized Infantry Battalion  
Task Force

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# AUTHORIZATION LETTER

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**30 SEPTEMBER 1987**

By Order of the Secretary of the Army:

***CARL E. VUONO***

*General, United States Army*

*Chief of Staff*

Official:

***R. L. DILWORTH***  
*Brigadier General, United States Army*  
*The Adjutant General*

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