

* APPENDIX G

EMPLOYMENT OF THE ANTIARMOR COMPANY

The purpose of the antiarmor company is to provide accurate, long-range antiarmor fire support to reinforce the battalion's antiarmor fires. The Army fights by combining fire and maneuver. Doing this requires a support-by-fire force and a maneuvering force. The mission of the support-by-fire form is to reduce the enemy's ability to interfere with the movement of the maneuver force and, within the capabilities of the support-by-fire force, to destroy the enemy's ability to fight. The mission of the maneuvering force, which may consist of both infantry and armor, is to close with and destroy the enemy. The antiarmor company can fulfill the support-by-fire requirement, enabling the task force to mass its infantry, BFs or tanks to maneuver at the decisive point. This appendix discusses the employment of the antiarmor company in mechanized infantry battalions. Because any leader may have to assume command in combat, the term "leader" refers to all antiarmor leaders from the company commander down. Except when stated otherwise, the term "commander" refers only to the antiarmor company commander. Each commander sets an example of competence and professionalism while preparing his soldiers to fight. He must know how to best use the TOW in combat; he must know the abilities and limitations of his company's other equipment as well as how to best employ it.

CONTENTS	
PARAGRAPH	PAGE
Section I. COMMAND, CONTROL, AND PLANNING	G-2
G-1 Commander's Intent	G-3
G-2 Mission Tactics	G-3
G-3 Mission Orders	G-4
G-4 Main Effort	G-5
G-5 Planning Considerations	G-5
Section II. DOCTRINE	G-12
G-6 Mutual Support	G-12
G-7 Security	G-13
G-8 Flank Shot Engagements	G-13
G-9 Massed Fires	G-14
G-10 Standoff	G-15
G-11 Cover and Concealment	G-15
G-12 Employment in Depth	G-19
G-13 Employment as Part of a Combined Arms Team . . .	G-20
Section III. TACTICS AND TECHNIQUES	G-20
G-14 Offensive Operations	G-20
G-15 Defensive Operations	G-25
G-16 Retrograde Operations	G-31

PARAGRAPH	PAGE
G-17 Special Missions	G-35
G-18 Tactical Road March	G-36
G-19 Assembly Area Operations	G-37
Section IV. FIRE CONTROL	G-38
G-20 Principles of Fire Control	G-38
G-21 Coordination of Company Fires	G-39
G-22 Engagement Priorities	G-39
Section V. PROCEDURES	G-40
G-23 Security	G-40
G-24 Priority of Work	G-40
G-25 Positioning of TOW Vehicles	G-41
G-26 Types of TOW Missiles	G-43
Section VI. COMBAT SUPPORT	G-45
G-27 Engineer Support	G-45
G-28 Intelligence and Reconnaissance Support	G-45
G-29 Air Defense Support	G-46
G-30 Fire Support	G-46

Section I. COMMAND, CONTROL, AND PLANNING

This section discusses how the antiarmor company commander leads his company personally and through his XO, first sergeant, platoon leaders, and other subordinate leaders. He employs his company in combat based on orders from higher headquarters and on his METT-T analysis. In the absence of orders, he bases his actions on an understanding of the battalion mission and on his commander’s intent and concept of the operation.

G-1. COMMANDER’S INTENT

The commander’s intent drives mission tactics. His intent is his stated vision, which defines the purpose of the operation and the end state with respect to the relationship among the force, the enemy, and the terrain. It should also include how he expects this end state to support future operations.

- a. The overall purpose of the mission is more important than the individual assigned tasks. Each subordinate commander must know why and how his assigned tasks relate to the overall concept of the operation. Then, if his situation changes and he loses contact with higher headquarters, he can use his initiative to achieve the desired end results.

- b. The battalion commander has a dual responsibility. He must understand the intent of the brigade and division commanders (two levels up), and must ensure his intent is understood at company and platoon levels (two levels down). The commander's intent paragraph in the OPORD should begin with the words, "My intent is" to ensure subordinates can easily understand it.
- c. A clear commander's intent increases agility and initiative, and improves timing at all levels. It helps in shifting the main effort on a fluid battlefield.

G-2. MISSION TACTICS

The purpose of command and control is to allow the commander to generate and apply combat power at the decisive point on the battlefield. Mission orders are used to provide command and control to (directing) military operations. Subordinates are encouraged and expected to act alone to execute assigned missions, consistent with the intent of the next two senior commanders. The commander must—

- a. Anticipate a free-willed opponent and expect the unexpected. The enemy sometimes fails to follow his doctrine or act as IPB indicates he will. The commander must be flexible. War games, contingency plans, employment in depth, well-developed and rehearsed SOPs and a reserve all contribute to flexibility.
- b. Organize and direct operations to require minimum intervention. When precise control is required for synchronization, such as an on-order task, provide the subordinate with the criteria for making the decision.
- c. Allow time for subordinate planning. The one-third/two-thirds rule applies not only to OPORDs but also to rehearsals, briefbacks, or any other centralized events that reduce subordinates' preparation time.
- d. Assign resources with as few restrictions on employment as possible. Allocate assets and support priorities to subordinates, and specify only the desired results.
- e. Allow maximum freedom of action within the scope of his intent. Because battles often develop in unforeseen directions, leaders must often act with incomplete information or instructions. They must act quickly or risk not generating sufficient combat power at the decisive point in time. Taking advantage of opportunities in order to accomplish the mission is not only allowed but also encouraged, expected, and sometimes required. Leaders should try to inform their higher commander before they act.
- f. Structure communication to allow subordinates to command well forward. Position himself on the battlefield where he can exert the greatest influence, both directly and through subordinate leaders. At the same time, he must retain the ability to shift the main effort of the battle. He can locate forward with the lead platoons in the command group, or he can locate in the main

CP. Whatever else he does, he must be able to command and control all organic and supporting units equally from either location.

G-3. MISSION ORDERS

Army operational doctrine requires mission tactics. Decentralization provides subordinates the latitude to make decisions rapidly within the framework of the commander's concept and intent.

- a. Mission orders address only the required information. They provide the framework of *what* the commander wants done—not *how* it is to be done. Such orders need cover only three important things. *First*, they must clearly state what the commander issuing the order wants accomplished. *Second*, they must point out limiting factors that must be observed for coordinating purposes. *Third*, they must state what resources are to be made available to the subordinate commander and what support he can expect outside his command.
- b. Execution of mission tactics requires initiative, resourcefulness, and imagination. Commanders must be ready to adapt to situations as they find them, not as they expected or desired them to be.
- c. Subordinate leader initiative is based on mission orders and the commander's intent. These define the limits of company operations and provide the opportunity for a subordinate to take advantage of opportunities on the battlefield. The subordinate leader must be positively aggressive. He asks his commanding officer for information, resources, or revision of plans as needed and stands up for his position when he feels he is right.
- d. Though initiative and independence are encouraged, subordinates are limited by the requirements for unity of command and unity of effort, and by the commander's intent. Subordinates who feel they must disobey orders due to a perceived change in the situation must accept the responsibility for their actions. The commander's intent must be clearly stated and foremost in the minds of subordinate leaders. To win, subordinate leaders must display initiative, but this initiative must be driven by an understanding of the commanders' intent, not by a desire for independent action. If independent action is required in order to meet the commander's intent for the operation, that action must be taken. However, subordinate leaders must weigh the changing tactical situation against the need for synchronized unit action. They must look at the "big picture." Thus initiative and freedom of action are more likely used during an exploitation or pursuit; disaster could result for the entire force if an independent action is conducted during a delay or withdrawal under enemy pressure.
- e. Commanders normally use mission-type orders. However, due to the requirement for synchronization of the overall mission, they must occasionally give subordinates specific instructions on how to accomplish a mission.

G-4. MAIN EFFORT

The company with the most important task in the battalion commander's concept at a particular time is designated as the main effort. All other units support the quick success of this company. Subordinate commanders link their actions to the actions of those around them, but leave room for initiative. They base their decisions about independent actions on how their unit relates to the main effort. Success by the main effort at the decisive point should result in the success of the company's mission. If conditions change and success of the overall mission can be obtained more cheaply or quickly another way, the battalion commander shifts the main effort to another unit. Support priorities then change to ensure the success of the newly designated main effort.

G-5. PLANNING CONSIDERATIONS

The antiarmor company commander uses troop-leading procedures to plan, coordinate, execute, and supervise operations. He must know what tasks an antiarmor company can perform.

- a. **Troop-Leading Procedures.** Troop-leading procedures are continuous and begin on receipt of the mission. The company commander uses these procedures to plan, coordinate, execute, and supervise operations. They need not be performed in a specific order, nor does each of them have a clear beginning. For example, the commander can issue a warning order while conducting his estimate of the situation.
 - (1) **Receive and analyze the mission.** The company commander receives a mission in an oral or written battalion OPORD, FRAGO, or warning order. On receipt of this order, he begins his estimate of the situation and plans how to use available time.
 - (a) The commander uses the information available in the battalion OPORD to determine the mission, its purpose, and the inherent constraints on his company. This information comes from the battalion's *mission statement*, from battalion and brigade commanders' *intents*, and from the *coordinating instructions*. The commander then considers METT-T and other relevant factors to determine implied missions. Using this information, he determines how to restate the mission for his company and how to accomplish the mission.
 - (b) Time is the most crucial resource for a unit receiving a new mission. The leader should use only one-third of his time for company planning in order to allow subordinates the remainder to make their plans. For example, a company commander given nine hours should use no more than three, which leaves six for subordinates to plan, reconnoiter, and issue their orders. This one-third/two-thirds rule increases the chance for mission success; it allows time for the whole company to receive

and understand the commander's intent and concept. This creates a sense of purpose in the company, which makes it more effective.

- (2) **Issue the warning order.** As soon as he receives a warning order or other information about an impending mission, the company commander issues his warning order explaining the restated mission. Warning orders are issued through the chain of command to ensure all personnel are informed. No standard format exists for a warning order. However, it should include the situation, the mission, general instructions (earliest time of movement, OPORD location and time), and special instructions. If time is too short for a new FRAGO or OPORD to be issued, the warning order may include new information.
- (3) **Develop a tentative plan.** The company commander's tentative plan states how he intends to accomplish the mission. He must analyze the factors of METT-T. Developing the plan is not a mechanical process; it requires the commander to use his judgment. The product of this step is the commander's *concept of the operation*. This is based on the commander's knowledge of the situation, on the mission analysis, and on the estimate of the enemy situation. The estimate is based on patrol reports and on information from the battalion S2. The commander continues by developing several courses of action (COAs) and selecting one to be his tentative plan. He can change the plan based on the leader's reconnaissance or on new information. The tentative plan provides the concept of operation, a scheme of maneuver, and a fire support plan, and is the basis for coordination, unit movement, reorganization, and reconnaissance. The mission statement includes the *who, what, when, where, and why* of the mission. The company commander has no staff, but he can discuss his plan with subordinates or attached personnel. This serves also to give subordinates a better view of the commander's concept and to give attached personnel a chance to advise in their areas of specialized knowledge.
- (4) **Begin necessary movement.** The company commander acts quickly and efficiently so his platoon leaders can move, reconnoiter, and prepare their squads. If the company must move a great distance before the operation, it should move as soon as it receives the battalion's warning order. If the company is to participate in a tactical or strategic airlift, preparations should begin as soon as the company warning order is issued. This permits the company commander and the platoons to arrive at the terrain early. When the commander is called to receive his order, he takes the company XO with him. The XO returns to the company with the warning order and, in the absence of the commander, moves the company. The first sergeant supervises the logistical operations. This includes fuel, ammunition, medical needs, maintenance requirements, transportation, and food support. Meanwhile, the commander reconnoiters, checks his plan, and issues his final order. Many of the tasks involved in a tactical movement are routine and should be part of the company SOP.

- (5) **Reconnoiter.** A commander must sometimes issue orders based on a map reconnaissance. He should do this only when a ground reconnaissance cannot be conducted; the ground reconnaissance shows the commander whether his concept will work on the terrain. The commander takes his platoon leaders and a security force with him during a reconnaissance. They travel by covered and concealed routes to one or more vantage points and observe the terrain. The security force provides overwatch while the leaders reconnoiter. If neither ground nor air reconnaissance is possible, then the commander should request all new information on the terrain such as detailed maps and photo reconnaissance.
 - (6) **Complete the plan.** Reconnaissance may change the plan and add detail. New information is used to refine the tentative plan and to make any final changes to the operation.
 - (7) **Issue orders.** A company commander rarely issues written orders. Normally, he prepares his notes in the five-paragraph order format and gives an oral order. He should give the order first to his orders group, which consists of the XO, the platoon leaders, the first sergeant, and the leaders of attached units. The graphics that support the operation should be on the commander's maps already and should be copied onto subordinates' maps before the order is given. The commander should use one of two methods to give his concept of the operation. He should either use a terrain model or sketches, or he should overlook the area of operations, using it to illustrate his concept while he gives the OPORD. This ensures that subordinates understand the concepts of maneuver for their unit and other units. By having his subordinates brief him back or walk through the plan, the commander can ensure they understand it.
 - (8) **Supervise.** A leader supervises preparation (precombat checks and rehearsals) and execution of the mission. Constant supervision is as important as issuing the order. Officers and NCOs ensure that all phases of preparation are complete.
- b. **Mission.** A mission consists of the company's primary task and purpose. To clarify his company's mission, the commander may add other mission-essential elements such as time, place, or unit identification.
 - c. **Tasks.** Tasks are components of a mission. FM 25-100 states that a task is "a clearly defined, observable, and measurable activity accomplished by units or forces." It then states that, "A task contributes to other activities or missions." A task is what defines the mission so that the mission is attainable. A task describes a desired effect on the enemy, the terrain, or friendly forces. A company's mission-essential task is the one that, when completed, fulfills the company's purpose within higher headquarters' concept of the operation. An operation is not a task. The most common antiarmor tasks areas follows:
 - (1) **Support by fire.** The battalion commander designates the position and orientation of positions and orients direct-fire weapons on an objective or

into an engagement area. To further clarify this task, he includes a qualifying task. For example, instead of simply saying, "Support by fire," he will say, "Support by fire to fix."

- (a) **Support-by-fire to fix.** The battalion commander may assign an element to provide antiarmor support-by-fire to fix. The company's purpose is to prevent the enemy from moving any part of his forces for a specific period of time, from a specific location, or both, by holding or surrounding him.
- (b) **Support-by-fire to attrite.** The battalion commander may assign the company to provide antiarmor support-by-fire to attrite the enemy. The company's purpose is to reduce the effectiveness of the enemy by destroying his personnel or materiel.
- (c) **Support-by-fire to suppress.** The battalion commander may assign a company to provide antiarmor support-by-fire to suppress. The company's purpose is to use direct or indirect fire, electronic countermeasures, or smoke on enemy personnel, weapons, or equipment to prevent them from firing effectively on friendly forces.
- (2) **Overwatch.** The battalion commander positions the antiarmor company to support with immediate direct fire the movement of another company.
- (3) **Screen.** The battalion commander tasks the company to maintain surveillance, provide early warning to the main body, impede and harass the enemy with supporting indirect fires, and destroy enemy reconnaissance units.
- (4) **Conduct counterreconnaissance.** The battalion commander tasks a company to prevent hostile observation and detection of a force, area, or location by visual, electronic, sonic, or other means. He gives the counterreconnaissance force commander specific tasks such as "destroy" or "deny," rather than the general task, "conduct a counter-reconnaissance."
- d. **Positions on the Battlefield.** One of the biggest challenges faced by a commander is deciding where to position his platoons on the battlefield. This decision must be based on an analysis of the terrain, must include measures to protect the weapons systems, and must ensure mutual support between platoons.
 - (1) **Analyze terrain.** The first consideration in positioning the TOW system is to exploit every advantage offered by the terrain for using the tank-killing capabilities of the TOW.
 - (a) **Armor avenues of approach.** The commander must analyze all armor avenues of approach into the battalion sector. This should include all trafficable areas that provide cover and concealment such as woods or draws the enemy could use to counter the TOW. The commander should analyze the terrain 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? He can obtain much of this information from the IPB performed by the battalion S2.

- (b) **Engagement areas.** Once he has analyzed the terrain from the enemy's perspective, the company commander must next analyze it to identify potential armor engagement areas. He selects areas along the avenues of approach where the enemy will be most vulnerable to concentrated antiarmor fires. The areas the commander selects influence how he will deploy his forces in the defense. Therefore, after he participates in the initial estimate process with the battalion commander, the company commander recommends antiarmor engagement areas based on his terrain analysis. The antiarmor engagement areas the battalion commander selects may be forward of the FEBA or within the main battle area. Their locations determine where the battalion commander should allocate supporting fires and where obstacles and mines should be placed.
 - (c) **Flank shot positions.** The commander selects flank shot positions throughout the depth of the battle area. From these positions, antiarmor platoons will engage the enemy as he moves deeper into the main battle area. The positions selected must give the TOWs good fields of fire into the engagement areas; they must offer flank and rear shots along the avenues of approach and be located for mutual support and for support by other weapons systems. The company should be able to mass fires into the engagement areas while keeping the TOW systems dispersed in the main battle area.
- (2) **Protect the TOW systems.** To survive and contribute to the defense, the TOW systems must be positioned where they are protected from enemy direct and indirect fire and from mounted or dismounted assault. If possible, engineer support should be obtained for constructing survivability positions.
- (a) The positions must be on terrain that provides natural or man-made cover and concealment. In the defense, use of concealment is the best way to surprise the enemy. When the scheme of defense is concealed, the enemy has trouble coordinating his fires and maneuvering his platoons against specific targets. Using fires from flanking positions and properly using the TOWs standoff are excellent ways to provide protection from enemy fires.
 - (b) 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 or built-up areas, marshy ground, or steep slopes. Engineer support may be available to improve fields of fire or to create or improve obstacles.
 - (c) Three methods can be used to defend the TOW systems from dismounted infantry attack. The first is to position antiarmor squads

or sections with the infantry units. The second is to position infantry along avenues of approach leading to the TOW positions. The third is to reposition reserve or uncommitted forces to counter dismounted attacks after they have been discovered.

- (3) **Provide mutual support.** Mutual support provides some protection for weapons and crews by ensuring complete, continuous coverage of engagement areas and avenues of approach. TOWs are positioned so that their fires interlock with the fires of other TOWs and antiarmor weapons systems (tanks, Dragons, AT4s). Also, they are positioned so that their fires can engage enemy armored vehicles assaulting other TOW positions.
- (4) **Reduce vulnerability.** The commander does the following to reduce vulnerability to enemy suppressive fire:
 - (a) Avoids positioning platoons on easily targeted terrain features.
 - (b) Designates on-order platoon positions throughout the battle area to aid in quickly redeploying platoons once they have been targeted.
 - (c) Selects positions masked by terrain from which to fight.
 - (d) Enforces use of camouflage, concealment, and OPSEC.
 - (e) Plans movement on covered routes to subsequent positions.
 - (f) Plans use of smoke to obscure movement and to suppress likely enemy overwatch positions.
- (5) **Identify phase lines for disengagement.** Disengagement is breaking contact with the enemy and moving where the enemy can neither see nor engage the unit. The company disengages when it is directed by higher headquarters to move to a subsequent BP or to accomplish another mission elsewhere (withdrawal, retrograde, or counterattack). The company commander must identify phase lines where platoons must disengage in addition to selecting their primary and alternate positions. He chooses these lines so he knows when to order his platoons to move to their next positions. The location of these phase lines is based on the threat and on the terrain. If the commander wants his platoons to displace before they move within tank or BMP range, then he must determine where the Threat will be when he orders the platoons to move. If the terrain is open and unrestricted, the line must be farther out to allow the platoons time to displace. Conversely, if existing or reinforcing obstacles are located in front of the platoon position, the line can be closer.
 - (a) The company commander establishes rules for disengagement in case communications are lost—for example, he might tell the platoon and squad leaders to displace, with or without orders, when the enemy reaches a certain line on the ground.

- (b) Disengagement from terrain-masked positions is simplified, because units are protected to their front from enemy direct-fire weapons. However, smoke could be used to conceal movement under any circumstances.
- (c) The company commander should have his platoons rehearse the disengagement to ensure all squads know where to go and what route to use. Soldiers also fully understand how the battle will be fought if they rehearse it. Rehearsals ensure that TOWs can get to their alternate positions without being overtaken during repositioning.
- (d) When disengaging, the company coordinates its moves with units to its flanks and rear.
- (e) The disengagement plan should be simple. The commander chooses one technique or a combination of techniques to disengage. He may choose to disengage by *internal overwatch*. With this method, platoons disengage with least engaged platoons first to overwatch positions to support disengagement of platoons remaining in contact. Platoons in contact disengage and move until contact with the enemy is broken. The commander may choose to disengage by leaving one platoon or element in contact to cover the disengagement while the other platoons break contact. The designated *detachment left in contact (DLIC)* disengages next, using internal overwatch to cover its move back until contact is broken. This technique is not normally used when under heavy enemy pressure. He may plan to conduct the disengagement during *limited visibility* to cover the disengaging force. He should plan to use on-board smoke or to deliver smoke by artillery or mortar to cover the movement of the disengaging force. He should also use *obstacles*. Or, he can place himself during the disengagement where he can best control his company. He normally locates with the majority of his company and may place the XO with the disengaging element. When more than one platoon executes the disengagement, the company commander places himself with the larger element.
- (6) **Engage the enemy from the flank.** Frontal fire must be avoided. It attracts attention and is therefore deadly. The weapon should be able to fire from the flank. It should also be sited so that it is in defilade from the enemy's direction. Neither trailing tanks nor overwatch forces must be able to see the TOW launch signature—concealing it is vital.

Section II. DOCTRINE

Following the basic rules of antiarmor unit employment increases the probability of destroying targets and enhances the survivability of the antiarmor elements. This section discusses these basic rules.

G-6. MUTUAL SUPPORT

Antiarmor squads support each other due to their assigned tasks, their relative positions (with respect to each other and to the enemy), and their inherent capabilities. Mutual support is established when TOWs are employed by section and when sectors of fire are overlapped between sections.

- a. **Employment by Section.** Employment of TOWs by section establishes mutual support between two squads (Figure G-1). If one squad is attacked or forced to displace, the other can continue to cover the assigned sector. To achieve this, the squads are positioned so that fires directed at one squad suppress only that squad.

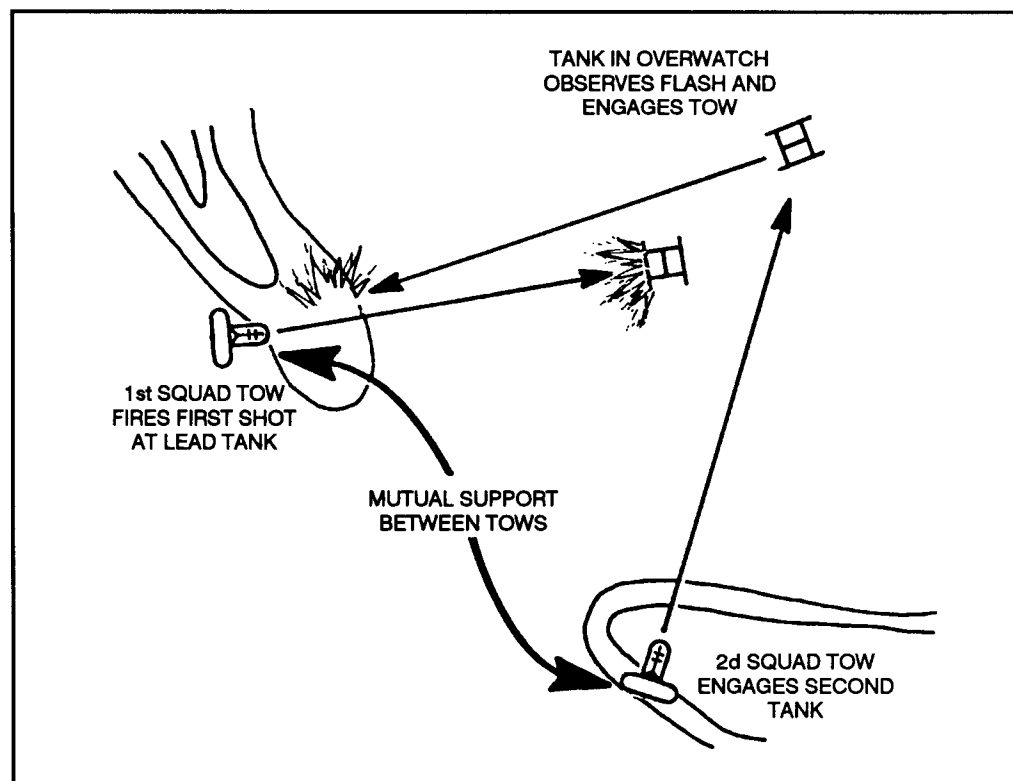


Figure G-1. Employment by section.

- b. **Overlapping Sectors of Fire.** Overlapping sectors of fire are vital to mutual support (Figure G-2). Primary, alternate, or secondary sectors of fire are used.

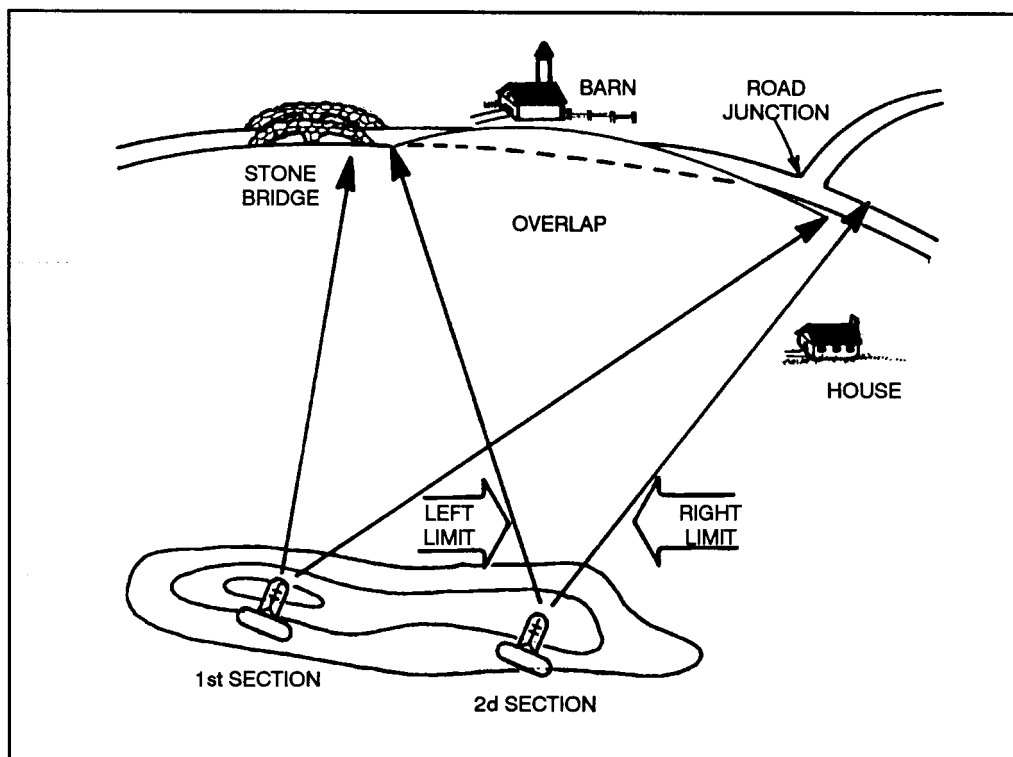


Figure G-2. Overlapping sectors of fire.

G-7. SECURITY

Antiarmor units can be attacked by dismounted enemy infantry. For protection, they should be positioned near friendly infantry units. Though they are not required to collocate with antiarmor squads, the infantry should cover dismounted avenues of approach to the antiarmor positions. Antiarmor units moving with infantry provide their own local security. During halts, the driver/loader dismounts to secure flank and rear sectors. The consequences of omitting this protective measure can be costly. Without flank and rear security during movement, whole antiarmor sections or platoons could be destroyed by as few as one enemy vehicle.

G-8. FLANK SHOT ENGAGEMENTS

Antiarmor squads and sections must be positioned to engage tanks or armored fighting vehicles (AFVs) from the flank. Flank shots at enemy tanks or AFVs

are more desirable than frontal shots (Figure G-3). An enemy tank or AFV is most vulnerable from the flank because it—

- a. Has its greatest armor protection in the front.
- b. Is oriented to the front—this applies to vision ports, laser range finder, crew, and firepower.
- c. Is less likely to be killed if engaged from the front.
- d. Is more likely to detect and suppress the attacking antiarmor units if engaged from the front.
- e. Creates a larger target from the flank.

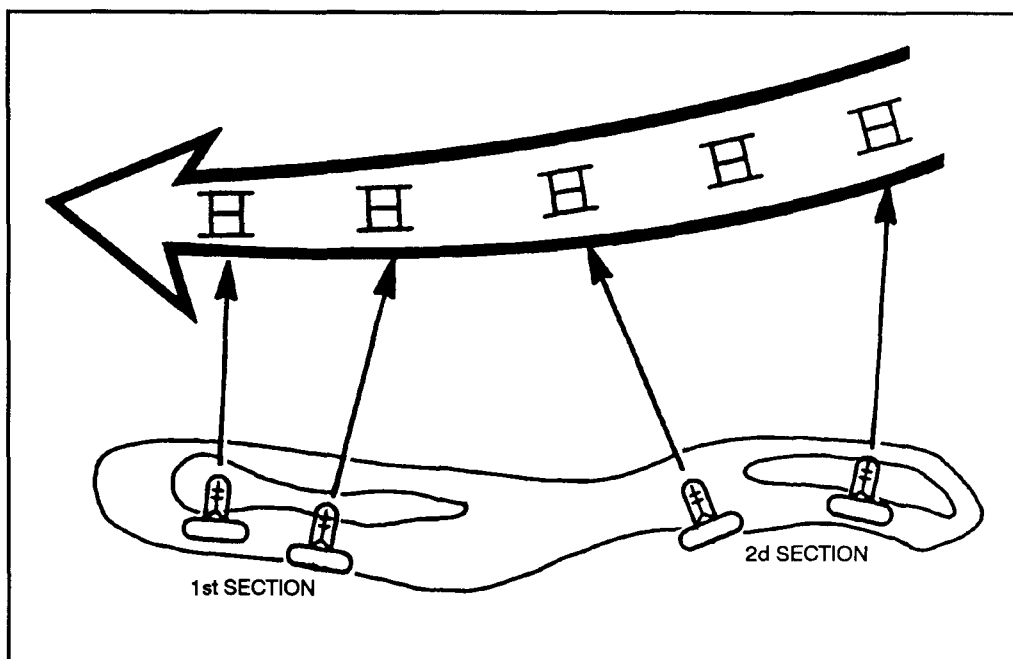


Figure G-3. Engagement from the flank.

G-9. MASSED FIRES

Mass is achieved by concentrating the effects of combat power at the decisive place and time to gain favorable results against the enemy. The antiarmor company achieves mass through mutual fire support, detailed fire control, and fire distribution measures synchronized with the combat elements of the supported unit.

G-10. STANDOFF

The advantage of firing a TOW rather than a tank's main gun is the accuracy of the TOW beyond the main gun's effective range—2,400 meters. This range advantage, or *standoff*, is the difference between the tank's maximum effective range and the TOW's maximum range (Figure G-4). TOW standoff does not require gunners to engage armored vehicles between 2,000 meters and 3,750 meters. This may not always be tactically feasible. The TOW missile requires extra tracking time to travel beyond 2,000 meters; this increases the likelihood of gunner error. For frontal shots, this gives the enemy more reaction time to maneuver against the friendly position. For flanking shots, this gives the enemy more time to reach cover. These difficulties increase if the gunner has to track the missile through his thermal nightsight or through any form of obscuration.

- NOTES:
1. Threat armored vehicles, such as the T-55 modernized, the T-64B, the T-72S, the T-80 main battle tank, and the BMP-3, can fire ATGMs through their main gun tubes. These missiles have ranges up to 4,000 meters, which negate the TOW's standoff.
 2. Threat armored vehicles can fire HE-fragmentation rounds to suppress TOW gunners at ranges greater than 4,000 meters. Some countries have HE warheads for their ATGMs. Also, turreted mortars provide direct fire, direct lay, and indirect fire.

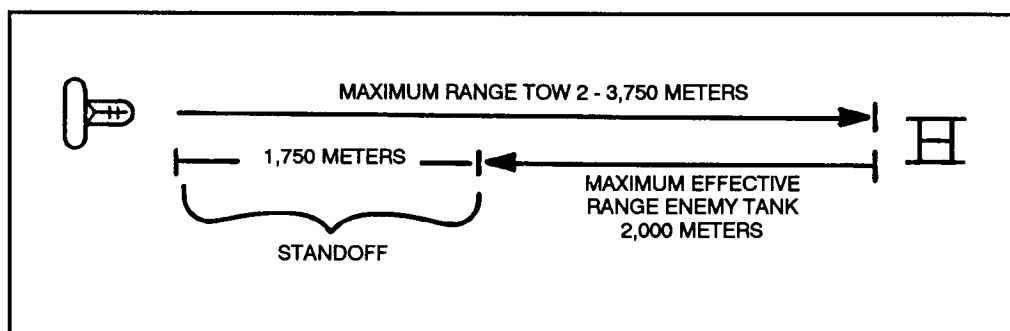


Figure G-4. Standoff.

G-11. COVER AND CONCEALMENT

Cover and concealment are critical to the survival of antiarmor weapons systems. The TOW system has several weaknesses: The missile has a long flight time; the TOW launcher has a slow rate of fire; the TOW missile has a distinctive firing signature; and the gunner is exposed during tracking—except in the ITV or BFV. The effects of these weaknesses can be reduced if the TOW system is covered and concealed, so leaden should look for appropriate terrain. Conspicuous terrain features should be avoided such as lone buildings or trees, hilltops, and other obvious positions. To further reduce their 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 G-5). This reduces the casualties and the equipment damage that could result from an artillery barrage. These aspects of cover and concealment also apply to movement and route selection.

NOTE: The analysis of cover and concealment is often inseparable from the analysis of fields of fire and observation. TOW positions must be both effective and survivable.

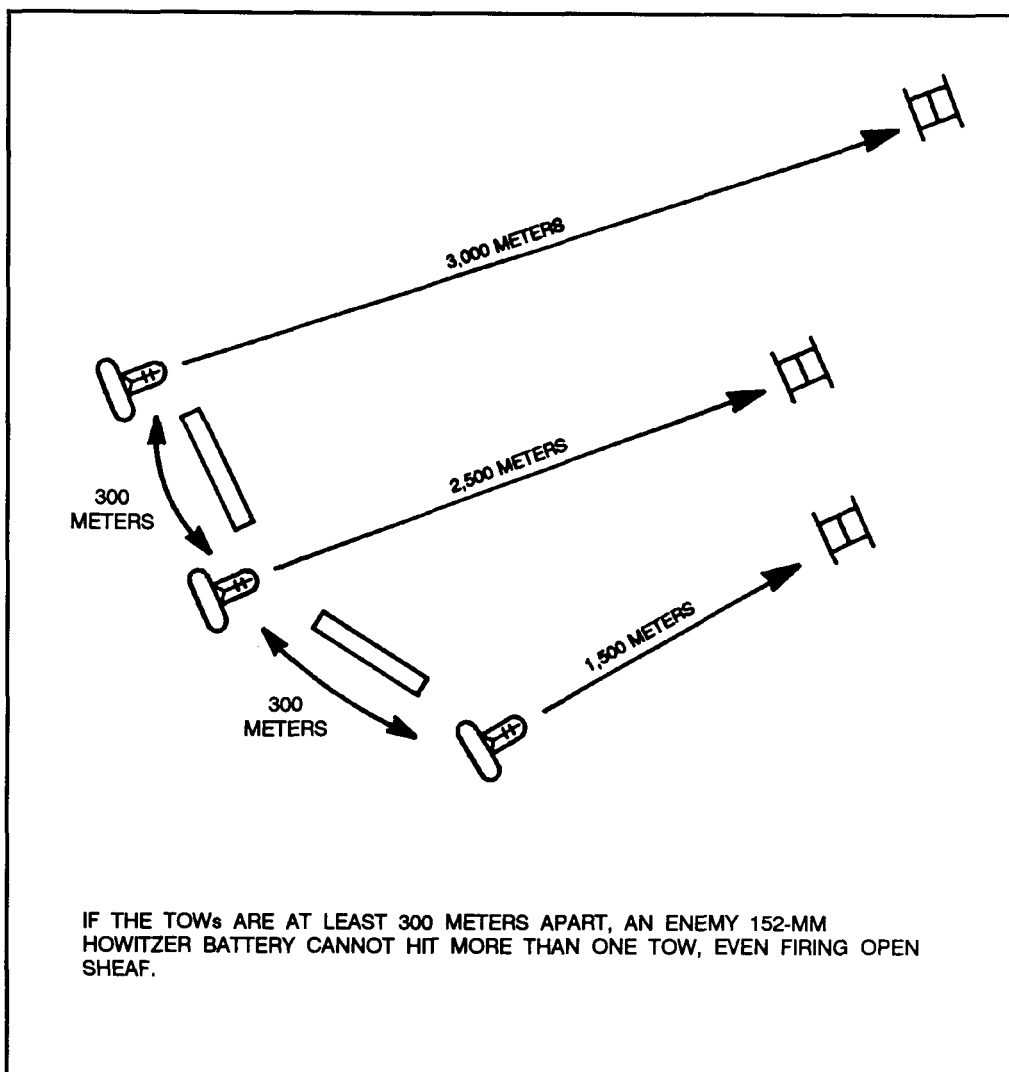


Figure G-5. Dispersion between squads.

- a. Offensive considerations include the following:
 - (1) Determine the routes with good cover and concealment.
 - (2) Identify areas along the approaches to the objective that offer poor cover and concealment.
 - (3) Consider the use of smoke and limited visibility missions to provide concealment.
- b. Defensive considerations include the following:
 - (1) Focus on the locations with good fields of fire.
 - (2) Think about how the enemy can use the available cover and concealment.
 - (3) Look at the position from the enemy's point of view, both day and night.
- c. Cover is protection from the fire of enemy weapons and from enemy observation (Figures G-6 and G-7). Cover may be natural or man-made. Natural cover includes reverse slopes, ravines, and hollows. Man-made cover includes fighting positions, walls, rubble, and craters.



Figure G-6. Cover.

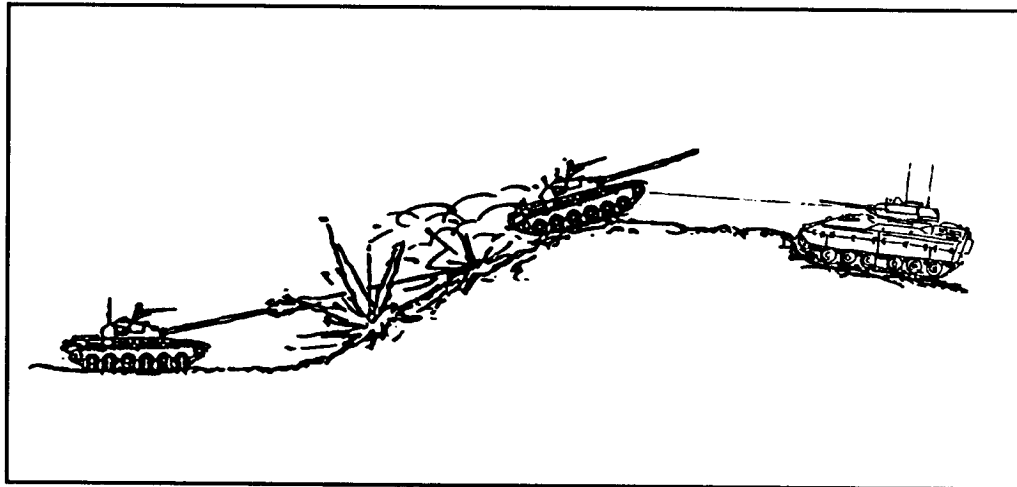


Figure G-7. Reverse slope.

- d. Concealment is protection from observation (Figure G-8). It is anything that hides a soldier, unit, or position from enemy ground and aerial observers and gunners. NVDs and other detection devices penetrate darkness and prevent it from providing sufficient concealment. Leaders must choose inconspicuous positions that do not silhouette TOW launchers against the skyline. The principles of concealment include the following:
 - (1) **Avoid unnecessary movement.** Movement attracts attention. A concealed TOW position may be detected easily if the launcher is traversed or raised or if any other unnecessary movement occurs. Moving against a stationary background makes objects stand out.
 - (2) **Use all available concealment.** Background is important. To prevent detection, the position must blend with the varied color and appearance of the trees, bushes, grass, earth, and man-made structures that form the background. A TOW position located in the open stands out clearly, but a sniper in the shadows is difficult to see. Shadows exist under most conditions, day and night. A TOW should never be fired from the edge of a wood line; it should be fired from a position inside the wood line (hidden in the shade or shadows provided by the treetops).
 - (3) **Stay low to observe.** The enemy has difficulty seeing a position with a low silhouette. To observe, the TOW leader should move forward.
 - (4) **Expose nothing that shines.** A reflection of light on a shiny surface instantly attracts attention and can be seen from a great distance. Optics should be used cautiously in bright sunshine due to the reflections they cause. At night, NVDs can even detect light emitting from the instrument panels inside ITVs.

- (5) **Avoid skylining.** Figures and vehicles on the skyline can be seen from a great distance, even at night, because a dark outline stands out against the lighter sky. A person's silhouette makes a good target.
- (6) **Alter familiar outlines.** Both military equipment and people provide familiar outlines to the enemy.
- (7) **Keep quiet.** Noises such as talking, idling vehicles, or touching metal to metal can be heard by enemy patrols or listening posts.

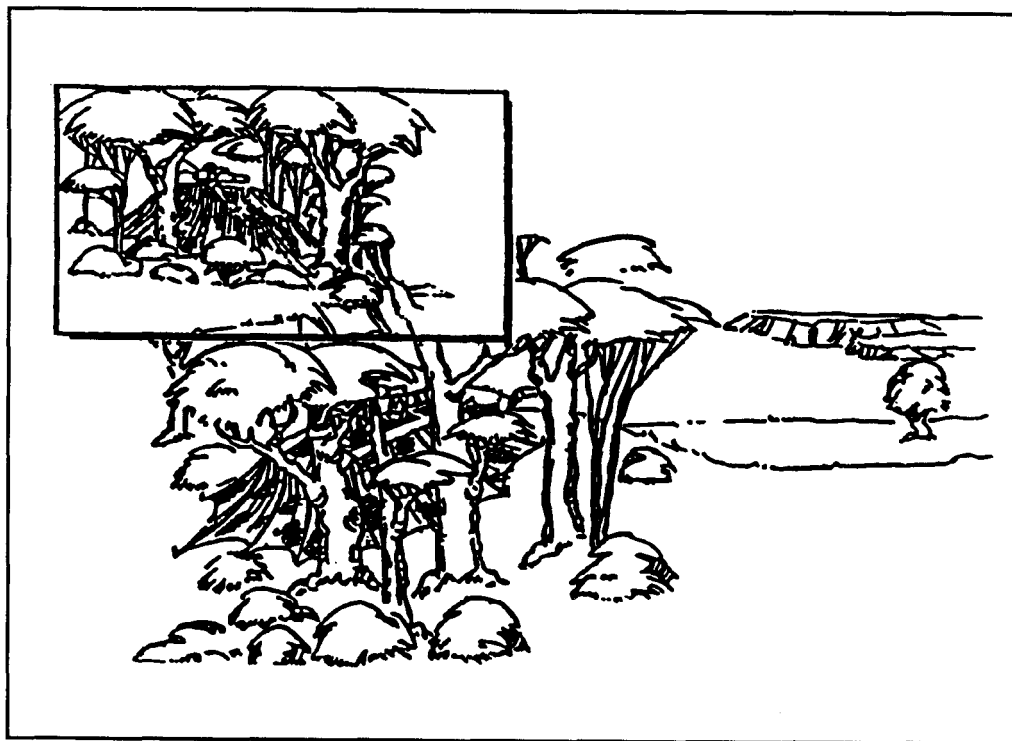


Figure G-8. Concealment.

G-12. EMPLOYMENT 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 initially positioned forward (then moved to in-depth positions as the enemy closes) or in depth.

G-13. EMPLOYMENT AS PART OF A COMBINED ARMS TEAM

Skillful integration of infantry, BFVs armor, engineer, and indirect-fire assets greatly improves the survivability and lethality of antiarmor units.

- a. **Infantry.** Infantry is needed to provide local security, to emplace obstacles (wire and mines), and to engage dismounted infantry and armor.
- b. **Engineers.** Engineer assets help shape the engagement area by emplacing tactical obstacles. These obstacles are employed to reduce the enemy's ability to maneuver, mass, and reinforce as well as to increase his vulnerability to fires. To accomplish this, obstacles must either disrupt, fix, turn, or block the enemy. The engineers emplace the obstacles inside designated obstacle zones, belts, and groups. To be effective, the obstacles must be covered by both direct and indirect fire.
- c. **Indirect Fires.** The antiarmor company commander must be part of the indirect fire planning process at company and battalion. He must coordinate frequencies, call signs, and priorities of fire. Any antiarmor leader can request indirect fires. To do this, he must contact either the battalion mortar platoon, the FIST of a designated task force tank/infantry team, or the DS artillery battalion. Indirect fires (artillery and mortars) are used for several purposes.
 - (1) To destroy or neutralize the enemy.
 - (2) To slow the enemy rate of advance.
 - (3) To breakup enemy formations.
 - (4) To cause enemy vehicles to button up.
 - (5) To suppress accompanying enemy artillery and ATGM support-by-fire.
 - (6) To fire obscurants (WP/HC smoke) to help conceal friendly launch signatures and to cover movement of TOW squads between positions. However, obscurants can degrade the capability of the TOW.

Section III. TACTICS AND TECHNIQUES

This section discusses some of the offensive and defensive methods used in the employment of antiarmor units.

G-14. OFFENSIVE OPERATIONS

Destroying the enemy's fighting force is the only sure way of winning therefore, the main purpose of an attack is to destroy enemy forces. The antiarmor company serves as the support-by-fire unit for the assault. It overwatches or supports by fire the maneuver or assault force of the battalion task force from

positions chosen by the task force and the antiarmor company commander. The antiarmor company places destructive or fixing fires on known and suspected enemy positions, adjusts indirect fires to support the maneuver force, and protects the maneuver force against counterattacks. The success of the attack depends in part on how well the commander understands the dynamics of battle. Success also depends on how the commander applies the operational concepts of an attack during both its planning and execution phases.

- a. **Purpose.** Infantry battalions conduct offensive operations for the following reasons:
 - To defeat enemy forces.
 - To secure key or decisive terrain.
 - To deprive the enemy of resources.
 - To gain information.
 - To deceive and divert the enemy.
 - To hold the enemy in position.
 - To disrupt an enemy attack.
- b. **Planning.** Planning operations at company level involves less detail than at battalion level. Company commanders prepare their estimates and plans, using the one-third/two-thirds rule to allow time for subordinates to prepare theirs. Planning includes developing a scheme of maneuver and a fire support plan.
 - (1) **Scheme of maneuver.** The scheme of maneuver reflects the purpose of the mission and the commander's plan to position his platoons. The scheme has enough detail to ensure subordinates understand the purpose of the operation. The scheme of maneuver—
 - (a) Identifies objectives for platoons and assigns responsibilities and tasks.
 - (b) States the route and movement formations used to move from the LD to the objective. Routes chosen should offer cover and concealment, allow the unit to move rapidly, allow it to avoid obstacles and enemy kill zones, and allow it to mass combat soldiers on the enemy flank. Using movement formations allows the company the flexibility to react to different situations.
 - (c) Identifies the platoons' primary, alternate, and supplementary positions. Assigning positions allows the commander to direct TOW missiles onto the likely armor avenue of approach.
 - (d) Describes the commander's plans to use the platoon's fires to destroy the enemy in the battalion zone. The commander identifies TRPs and phase lines based on how he views the battle and intends to defeat the

enemy. He establishes disengagement criteria to prevent the company from becoming decisively engaged.

- (2) **Fire support plan.** The purpose of fire support is to optimize the employment of fire support systems. To do this, the commander integrates and synchronizes fire support with the battle plan. Because the antiarmor company seldom has an FSO, the commander must also implement the plan. He gives the battalion FSO the specific requirements for fire support and for tasks to support the company's concept of the operation. The commander plans fire support at the same time he develops the scheme of maneuver. During the planning process, the commander assesses available fire support assets (mortars, artillery, offensive EW, CAS, NGF, Army aviation, ADA and engineers), determines whether these assets can accomplish the tasks required, and determines which best support the scheme of maneuver. The key to effectively integrating fire support is to thoroughly and continuously include fire support in the planning process. To support the battle plan, the fire support plan covers suppressing, neutralizing, or destroying enemy direct-fire weapons systems, breaking up enemy formations, degrading enemy command and control, destroying enemy logistics sites, and screening company movement. Three stages of fires are planned—before the engagement (preparatory), during the engagement, and in support of the disengagement.
- (a) Before an engagement (assault), preparatory fire is delivered on targets. Preparatory fire consists of an intense volume of fire delivered IAW a scheme of maneuver. Factors influence the duration of preparatory fire such as the fire support needs of the entire force, the number of targets, and the type and amount of firing assets and ammunition available. These fires suppress enemy direct-fire weapons and support the movement of the company.
 - (b) Fires during the engagement destroy, neutralize, or suppress enemy weapons, isolate the enemy within the engagement area, stop or delay second-echelon forces from reinforcing the enemy, and reduce the enemy's counterattack ability.
 - (c) Gunners supporting a disengagement concentrate on likely enemy counterattack and withdrawal routes. This helps destroy the enemy and allows the units to withdraw to new positions. During this stage, fires screen the company's movement (TC 6-71). Fire support considerations include the following:
 - Number and type of fire support units available.
 - Number of combat observation and lasing teams (COLTs) assigned.
 - Priority targets.
 - Priority fires.

- Identification and timing of preparatory fires.
- Use of nuclear and chemical fires (by higher headquarters).
- Effect of fires in creating obstacles.
- Close air support.
- Timed fires.
- High payoff targets (HPTs).
- Smoke.
- Allocation of Copperhead target.

c. **METT-T Analysis.** METT-T is used as an analytical framework for planning combat operations. The following shows how METT-T can be used to accomplish a mission:

(1) **Mission.**

- (a) What is the intent of my battalion or brigade commander?
- (b) What is the purpose of my mission?
- (c) What are the tasks of my company? What am I expected to accomplish? (Both specified and implied tasks must be considered.)
- (d) How much time do I have? What times are critical-for example, start points, release points, and lines of departure?
- (e) Have I assigned the correct missions and tasks to my platoons?

(2) **Enemy.**

- (a) What is the enemy's composition and what are his abilities? (This information is needed to understand the enemy.)
- (b) What is the enemy's strength (weapons, supporting fires, special munitions, organization)?
- (c) What is the enemy's disposition? What avenues of approach would support his tactics (front, flank, mounted, dismounted, air)?
- (d) What tactics and formations will the enemy use in relation to my plans?

(3) **Terrain and weather.** (See FM 34-81-1 for more information about the effects of weather.)

- (a) What effect will the terrain have on my mission? (To answer this, the company commander analyzes the terrain based on OAKOC.)

O - Observation and fields of fire.

A - Avenues of approach.

K - Key terrain.

O - Obstacles.

C - Cover and concealment.

- (b) Will the weather hamper or enhance operation of my systems, units, or supporting units? What can I do about it?
- (c) Will the weather change the trafficability of the area?
- (d) How much space do I have? Is it adequate? How does it affect my company?
- (e) What is the effect of these factors on use of the obscurants and the employment of chemical weapons?

(4) Troops.

- (a) What type forces are available?
- (b) What is the strength of the available forces?
- (c) What are the abilities of my platoons?
- (d) What CS and CSS are available?

(5) Time available.

- (a) How much time do I have before the mission begins?
- (b) How much time will the enemy need to get here?
- (c) How much time will the company need to get there?
- (d) How long should the enemy stay in the engagement area?

d. **Antiarmor Support in the Offense.** Antiarmor companies use the same techniques for movement to contact, hasty attack, and deliberate attack (discussed here) as they do for other offensive operations such as exploitation and pursuit.

e. **Operations Security.** OPSEC includes all measures taken to maintain security and achieve tactical surprise. It includes countersurveillance, physical security, signal security, and information security. It also involves identifying, eliminating, or controlling tactical indicators that the enemy can use.

- (1) OPSEC is a command responsibility. All personnel must practice good OPSEC procedures before and during the battle. This requires high standards of discipline and training.
- (2) Enemy forces use a wide range of intelligence-gathering sources to learn the locations, abilities, and intentions of friendly units. These sources can include ground reconnaissance units, photo and signal intelligence, and HUMINT. OPSEC measures should be considered during the planning and conduct of each operation and after each after-action report (AAR).
- (3) The key to OPSEC is reducing electronic, visual, thermal, and operational signatures. For OPSEC to be effective, the company must see the enemy before he sees the company. Although the commander must depend on battalion for intelligence, he can include the following checklist in his SOP to avoid OPSEC violations:
 - (a) Use OPs to cover areas that are hard to observe.

- (c) Use defilade positions for cover and concealment.
 - (d) Enforce noise and light discipline to reduce possible detection of the company in day or night.
 - (e) Plan smoke and use it when necessary.
 - (f) When COMSEC devices are unavailable or nonoperational, send friendly locations relative to friendly graphic control measures or encode them using the current SOI. Send enemy locations by radio in the clear.
 - (g) Ensure radio transmissions are less than 15 seconds, with a break between transmissions.
 - (h) Use the SOI authentication tables. Platoons request authentication either when a change in the mission is received, when the authenticity of a transmission is in doubt, or when a net is opened or closed.
 - (i) Submit a (company) MIJI report when jamming, interference, or deception is detected.
- f. **Control Measures.** FM 101-5-1 defines control measures.

G-15. DEFENSIVE OPERATIONS

The commander must plan antiarmor tire in depth. In the defense, he may initially position antiarmor sections or platoons in one of two ways. He can position them in depth. Or, he can position them forward with task-force scouts or with the counterreconnaissance force, moving them to in-depth positions as the enemy closes. TOWs positioned forward establish antiarmor ambushes to destroy targets identified by the scouts or by the counterreconnaissance force. Establishing phase lines that can be identified in obscurity enables TOW gunners to fire within their engagement capability. Identifying far-half and near-half shots within the engagement area ensures minimal overkill in fire control.

- a. **Purpose.** The purpose of defensive operations is to defeat the enemy's attack and to gain the initiative. Defense is a temporary measure. It is conducted to identify or create enemy weaknesses that offer an early opportunity to change to the offense. Initially outnumbered, the defender uses maneuver first to blunt the attack. Then he concentrates combat power by counterattacking and by directing friendly strength against enemy weakness. Defensive operations destroy the enemy by achieving one or more of the following:
- (1) Causing an enemy attack to fail.
 - (2) Deceiving the enemy.
 - (3) Gaining time.
 - (4) Concentrating forces elsewhere.
 - (5) Controlling key terrain.

- (6) Wearing down enemy forces before offensive operations.
- (7) Retaining terrain temporarily.
- b. **Planning.** Planning for defensive operations begins when the commander receives a warning order or OPOD. He formulates a plan for the defense that meets his requirements for the mission. He bases this plan on the factors of METT-T and on those developed in the estimate of the situation. Based on this analysis, the commander completes the estimate of the situation and formulates a concept of defense. He decides how to defeat the enemy, where to concentrate effort, and where to take risks. The commander must use every resource available to offset the attacker's numerical advantage, to identify dangerous threats, and to mass combat power against the enemy's weaknesses. The terrain provides natural obstacles and potential for cover, concealment, and movement; these influence how the commander designs the defense. Also, the commander must plan how to reinforce natural obstacles with man-made obstacles to enhance the strength of defensive positions and to protect maneuvering units.
- c. **METT-T Analysis.** The commander must quickly consider Mission, Enemy, Terrain, and own Troops. With the information available, the commander establishes a Time schedule by identifying actions (time-critical tasks) to prepare the company for the operation. Platoon leaders then make their schedules based on the commanders.
 - (1) **Mission.** The first consideration when planning a defensive operation is the mission. It defines the area to be defended or the force to be defeated. The company commander must analyze the mission in terms of the higher commander's overall concept.
 - (2) **Enemy.** The enemy's doctrine, habits, equipment, and probable COAs must also be considered in planning the defense. Company commanders must look at themselves and their areas of operation through the enemy commander's eyes. They must then look for and counter vulnerabilities the enemy could exploit. In addition, they must identify probable enemy objectives and approaches to them. In a defense against an echeloned enemy, commanders must know how soon enemy follow-on forces can join the attack. If these follow-on forces can be delayed, the attack may be defeated in detail—one echelon at a time.
 - (3) **Terrain and weather.** The defender must exploit any aspect of the terrain that impairs enemy momentum or that makes massing or maneuvering enemy forces difficult. Defenders must engage the attacker where the terrain puts him at the greatest disadvantage. Controlling key terrain is vital to a successful defense. Some terrain may be so important to the defense that its loss would prove decisive. When terrain is a decisive factor, the leader makes it a focal point of his defense. Weather and visibility affect how defenders organize on the ground; commanders consider these effects as they analyze terrain. The defender uses man-made obstacles to improve the natural structure of terrain, to slow

or canalize enemy movement, and to protect friendly positions and maneuver. Commander must observe the terrain from the enemy perspective. This means they must be on the terrain to study proposed defensive areas and positions.

- (4) **Troops.** The commander also considers the nature of his force. Armor and mechanized forces can move on the battlefield even under artillery fire. Dismounted infantry can fight effectively in close terrain and in urban areas that limit mounted units. The commander also considers that his soldiers' mobility, protection, morale, and training help determine how they defend.

- (a) **Indirect fire support.** Indirect fires are used to enhance direct fires and to disrupt or isolate the enemy. Specific indirect-fire munitions (smoke, DPICM, HE) can be used for their various effects on the enemy. They can be used to canalize him, destroy him, or prevent him from observing the defender. Indirect fire is flexible; properly planned and employed, it contributes greatly to a unit's ability to mass fires at the decisive place and time.

- (b) **Mobility, countermobility, survivability.** Skillfully using engineer assets allows the defender to make the most of direct and indirect fires. Mobility operations allow reserve or counterattack forces to move to positions of advantage so they can exploit the success achieved by gaining and maintaining the initiative from the enemy. Countermobility operations canalize, slow, or break up enemy formations. This allows the defender to mass overwhelming firepower against the attacker. Survivability operations protect units from the effects of enemy firepower, thus conserving their fighting potential for use at the decisive time and place.

- (5) **Time available.** The amount of time available to prepare is a crucial factor in organizing a defense. The defense is more effective when it has time to reconnoiter and occupy positions; to fortify the ground; to plan fires; to install obstacles; and to coordinate and rehearse maneuver, fires, and logistic support. Time is a critical element for the defender; it cannot be wasted. Small units must be able to defend with little preparation, but their leaders must recognize that strong defenses take time to organize and prepare.

d. **Antiarmor Support in the Defense.** Antiarmor companies add long-range precision fires to the defense as part of the security force, as an element within the MBA and as support for counterattacking forces. Antiarmor platoons may also reinforce a unit whose mission is to prepare and defend a strongpoint. The following discusses how antiarmor companies support the defense:

- (1) **Security force.** Defending battalions deploy security forces forward of the forward edge of the battle area (FEBA) to provide early warning, to deny enemy observation of the MBA to assist rearward passage of a covering

torte, and to deceive and disorganize the enemy. The commander positions the security force where it can cover enemy avenues of approach into the defensive sector, that is, in OPs across the battalion front on suitable terrain. He positions antiarmor platoons with OPs that offer long-range fields of fire on high-speed enemy avenues of approach. As the enemy approaches, the antiarmor platoons use their standoff and engage armor at maximum range. Supporting field artillery and mortars engage at the same time with indirect fires to disrupt enemy formations and to force enemy crews to button up. These concerted fires degrade the enemy's ability to acquire targets. These fires also help reduce enemy pressure on any covering force units still in contact, which eases the unit's 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 continue this process through the FEBA and into the battalion defensive area to further deceive the enemy as to the defensive scheme. The security force may disengage under covering fires from the battalion and move to positions in depth, or it may assume another role in the battalion defense.

- (2) **Main battle area.** Within the MBA the battalion commander organizes and positions his forces based on his METT-T analysis. He normally deploys the antiarmor company in mass, but he may cross-attach one or two TOW platoons to strengthen his antiarmor defenses.
 - (a) The commander positions the antiarmor company and platoons to cover avenues of approach that afford long-range fields of fire. He employs tanks where fields of fire are shorter and more restricted. He should position antiarmor platoons where they can use their standoff range (except against ATGMs). To enable tanks and other antitank systems to achieve this standoff and to mass fires in a particular engagement area, he positions antiarmor platoons in depth or on the flanks of other defending companies. When he does this, he must also consider positioning infantry near the TOW systems to provide security against a ground attack. To achieve depth, the battalion commander must initially position his platoons throughout the depth of the sector, displace them from forward positions, use alternate and supplementary positions, mass TOW fires with tank or other antitank systems, and maintain standoff by repositioning to firing positions that allow the TOWs to engage tanks beyond the tanks' effective ranges (Figure G-9).

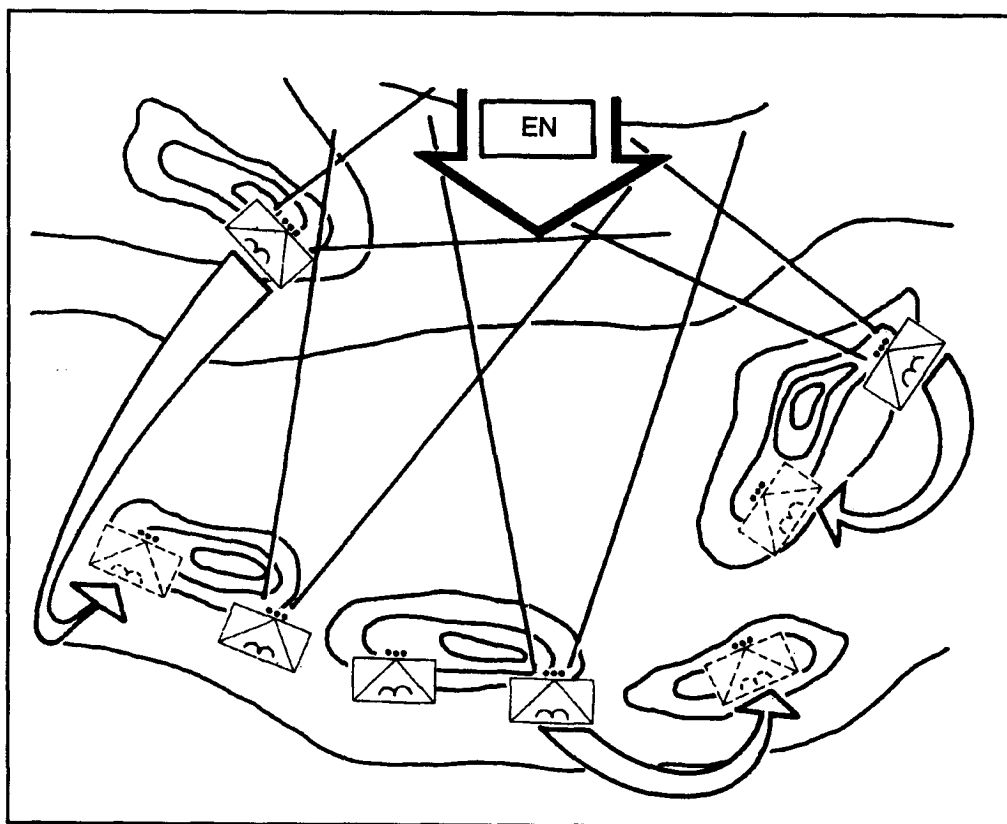


Figure G-9. Massing of fires using in-depth positions.

- (b) Skillfully integrating fires and obstacles prevents the enemy from easily engaging friendly antiarmor systems and slows and canalizes his advance. This increases TOW engagement time, which in turn increases the probability of achieving a target hit.
- (c) When terrain or other conditions dictate that antiarmor units locate with tanks or infantry (Figure G-10, page G-30), the commander selects positions that use each system's range capability.
- (d) Whether the commander locates them separately or along with tanks and infantry, antiarmor units 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 they change firing positions. When ranges are 2,000 meters or less, the commander should displace the TOW squads to enable them to regain their standoff, otherwise, he should have them change positions after each engagement.

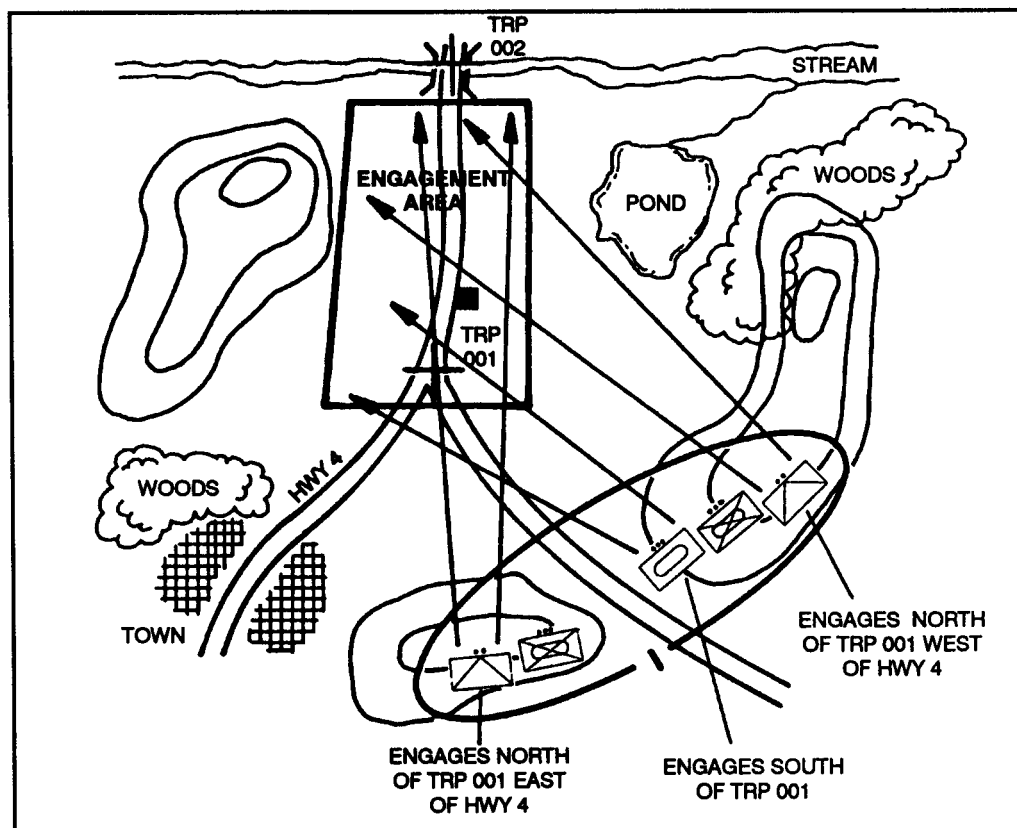


Figure G-10. Massing of fires from a single position.

(e) The control of and order of displacement for antiarmor units are special considerations. The vulnerabilities of ITVs and wheeled-vehicle mounted TOW systems can be reduced if the commander carefully plans and controls their displacement. The following factors affect displacement:

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

- (f) In daylight, the commander normally has TOW systems displace first, followed by infantry, then tanks. During limited visibility, the commander may displace tanks before infantry, but he normally displaces antiarmor units first. A thorough reconnaissance of routes and subsequent positions reduces confusion and movement time.
 - (g) In limited visibility conditions, the TOW nightsight enables the gunner to engage targets when visibility is degraded. However, environmental factors reduce target engagement distances.
 - (h) In most cases, the commander employs TOW systems mounted. This permits rapid movement and reduces their vulnerability to enemy direct and indirect fires. In some cases, the commander should employ them dismounted such as to defend a built-up area or to defend in built-up terrain. In these situations, the commander tries to use vehicles to transport the TOW systems to their firing positions and to resupply ammunition.
- (3) **Counterattack** The commander conducts counterattacks to disrupt and destroy an attacking force. Antiarmor units take part in the counterattack just as they would in a hasty or deliberate attack.
- e. **Control Measures.** Control measures help the leader explain his concept and the execution of the defense. He uses control measures to position units, to control movements, to distribute and control fires, and to synchronize combined arms. Several control measures, (sector of fire, TRPs, engagement area, position, strongpoint, boundary, contact point, and checkpoints) are discussed in FM 101-5-1. The following also apply:
- (1) **Disengagement criteria.** These describe a predetermined event that must occur on the battlefield before a soldier, weapon, or unit can move to a subsequent position.
 - (2) **Engagement criteria.** These describe a predetermined event that must occur on the battlefield before a soldier, weapon, or unit can begin firing.

G-16. RETROGRADE OPERATIONS

Retrograde operations, which are organized movements away from the enemy or to the rear, preserve the integrity of the force until the offense can be resumed. The three types of retrograde operations are *delay*, *withdrawal*, and *retirement*. Antiarmor elements help a battalion faced with a tank or motorized threat to conduct a delay or withdrawal. This paragraph discusses only those two operations. Delay, withdrawal, and retirement operations are discussed in detail in FM 7-20. The purpose of retrograde operations is to improve an operational or tactical situation or to prevent a worse one from developing.

- a. **Delay.** A delay is an operation in which space is traded for time. It differs from the defense; a delaying unit is seldom required to become decisively engaged, to hold terrain, or to destroy the enemy force. An exception occurs

when a delaying force is told to hold the enemy forward of a specified line for a given time, or to hold him there until a particular event has occurred. When given this mission, a delaying force is expected to achieve the required delay even if it must become decisively engaged to do so.

- (1) **Concept.** The concept of the delay is to fight the enemy with enough force to make him expend time deploying and maneuvering to close with the delaying force. The delaying force defends the delay position only until the enemy's actions threaten decisive engagement (except as described previously). The delaying force then disengages, moves to a subsequent position, and repeats the process.
- (2) **Task organization.** The battalion commander allocates antiarmor platoons to the security force, the delaying companies, and the reserve, based partly on his analysis of METT-T, but more importantly on the enemy avenues of approach. He can attach antiarmor platoons to delaying companies or to company teams covering armor avenues of approach with long-range fields of fire. To create another delaying company, he can cross-attach the antiarmor company with infantry and tanks. The antiarmor company may also provide the nucleus for a mobile reserve. The battalion commander may use this reserve to reinforce the ties of forward elements, to assist the disengagement, to cover repositioning forward elements, and to provide depth along the most threatening avenues of approach.
- (3) **Employment.** A company delay may be conducted in two ways: delay in sector or delay forward of a line until a specified time or event.
 - (a) *Delay in sector* is the delay mission that allows the most freedom in using terrain. Usually with this mission, no requirement exists to hold key or decisive terrain. Delay from sector may be conducted from successive or alternate positions. Successive positions are used when a wide sector or avenue of approach must be covered and when all or most of the forces must be deployed forward to cover the area. Successive positions are also used when the terrain prevents depth in the delay. The company fights the battle from phase line to phase line, front to rear. The platoons disengage separately from one phase line or battle position to the next, while remaining platoons provide overwatch. The situation may force the entire company team to disengage at the same time. If enemy forces move more quickly than expected, the possibility of becoming decisively engaged increases. With a delay from sector, bounding within platoons is necessary when the terrain restricts the platoons' ability to provide mutual security. Alternate positions are used when the area is deep and narrow enough to be covered by one or two platoons. Alternate positions allow for more depth and security. The leapfrog nature of this maneuver prevents the forces from firing everything they have at the enemy all at once. In a delay from alternate positions, platoons are moving and fighting at the same time, so this method is more difficult to control

than a delay from sueassive positions. However, because other platoons are fighting and providing security, the delay from alternate positions allows squads more time to move to their next positions.

- (b) *Delay for a specified time* is the delay mission that entails the greatest risk. This mission involves preventing enemy forces from reaching a certain area before a specified time or event, regardless of the cost. The task force commander restricts the crossing of a certain phase line or limits the maneuver from battle position to battle position, based on a specified time or event.
- (4) **Rehearsal.** The commander rehearses the delay mission. He can drive through the sector and envision it from the enemy's position. From there, the commander locates dead spaces or a mobility corridor that may have been overlooked. He also looks for weaknesses in his own positions or camouflage. The commander then assumes the role of the enemy to ensure the platoons can exeecute the direct fire plan. As he approaches, the platoons practice engaging at the appropriate phase lines and moving to alternate positions. When the commander reaches the phase line where each platoon is to disengage, that platoon displaces. The commander ensures they do so in the designated order and that the platoon covering the move reorients their weapons to cover the company sector. The commander ensures each vehicle uses the proper lanes to displace. He changes the movement routes of any vehicles that are exposed as they conduct the move. The commander approaches the position at a speed consistent with enemy doctrine to see whether the enemy will be able to engage or close with the delaying forces as they displace. He follows through his rehearsal to the final positions and adjusts his plan based on the results. He reviews the rehearsal with his XO and ensures his second in command can take over the command of the operation if needed.
- (5) **Command and control.** The commander must position himself to see the battle and assess both the enemy situation and the effectiveness of the delay plan. Because the enemy will seek a gap in the delaying forces, the commander must plan to maintain flank coordination throughout the operation. He must also assess whether the defenses are strong enough to make the enemy deploy. The commander must plan a series of redundant signals for displacing the platoons to their next set of battle positions.
- (6) **Maneuver.** As the enemy enters the engagement area and passes the phase line, the company engages with massed direct and indirect fires. These fires combine with a well-placed obstacle system to inflict severe casualties on the enemy. The platoons fire at the same sustained rate as they would in a battle position defense, moving to alternate positions to further exploit enemy weakness. If the enemy reaches the phase line where the platoons are to disengage or meets other disengagement criteria, the company begins displacing to subsequent positions.

Disengagement and withdrawal are the most dangerous parts of the operation. The commander must begin displacing before the enemy can close with the company. If he waits too long, the enemy could decisively engage the delaying force. Massed artillery fires and smoke screens aid in the disengagement. During the displacement, covering platoons shift their direct fires to cover the majority of the engagement area. Once the other platoons are out of danger, they overwatch while the covering platoon displaces. Along the egress route to the next defensive positions, artillery fire and reserve demolitions combine with overmatching fires to reinforce the delaying force's ability to avoid decisive engagement. Once in position, the delaying force repeats the process in an attempt to cause the enemy to deploy as often as possible and to destroy as much enemy equipment as possible.

- b. **Withdrawal.** Withdrawal is an operation in which all or part of a force frees itself from contact with the enemy to perform a new mission. Units should not withdraw while under heavy enemy pressure.
 - (1) **Concept.** Withdrawing units move secretly to deceive the enemy. Withdrawing units under enemy pressure initially conduct a delay. This enables them to gain a mobility advantage and to free nonessential combat, CS, and CSS units. To deceive the enemy and to protect the withdrawal of other units, some elements remain in contact. Such an element is referred to as a detachment left in contact (DLIC). The battalion XO normally commands a battalion DLIC, which may comprise either parts of each committed company team under control of the company XO, or of one or more whole companies or teams.
 - (2) **Task organization.** The size and composition of the DLIC depends on the width of the front, the forces available, the amount of enemy contact, and the period of delay required. Ideally, a DLIC's main function is to deceive rather than fight the enemy however, it must have sufficient combat power to stall him until the withdrawal has been completed.
 - (3) **Employment.** Antiarmor units can remain as part of a DLIC against an armored threat. They help by placing massed fires on enemy high-speed avenues of approach. The antiarmor company reinforced with infantry may form the nucleus of the battalion DLIC. Tank units should also be included due to the greater protection, mobility, and firepower they offer. Antiarmor sections, platoons, and companies fight as part of the DLIC the same as in the delay.
 - (4) **Command and control.** The company commander positions himself where he can watch the withdrawal of the main body and of the DLIC. Because the DLIC's combat power is limited, the commander ensures that it remains forward no longer than it must. If a rearward passage of lines must be conducted at the end of a withdrawal, the commander reports when all company elements have completed the passage, hands

the battle over to the stationary force, then joins his own force to prepare for its new mission.

- (5) **Maneuver.** The entire company must ensure that all activities appear normal while it prepares to withdraw. All normal defensive activities, including radio transmissions, eating schedules, and maintenance, must appear to be conducted IAW the current mission. Though vehicle movement may be required to position the DLIC and to prepare for the company's movement to the rear, it must be conducted gradually and quietly.

G-17. SPECIAL MISSIONS

After the battalion commander determines his task organization, he can employ the antiarmor company as a reaction force in support of rear operations, as a higher unit reserve, or as a security/counterreconnaissance force. Depending on METT-T, TOW HMMWVs equipped with HIMS to mount MK 19s and M2 .50 caliber heavy barrel machine guns can increase the combat power of a TOW company.

- a. **Rear Operations.** These include any operations in rear areas that protect units, lines of communications, installations, and facilities from enemy attack or sabotage. Though CS and CSS units operating in the rear set up their own defenses, they may require the greater protection of combat forces if the enemy breaks through or launches special operations into the rear area. During these rear operations, the antiarmor company acts as a reaction force. It must be prepared to respond within a specific amount of time. The company SOP should address these readiness conditions. Dispersion and camouflage must be weighed against responsiveness. This special mission requires the same amount of preparation as any other mission. The company must reconnoiter its area of responsibility and organize to best accomplish its attack. It must set up a CP to provide the best possible command and control. The rear area, base cluster, base defense operations centers, installation commanders, supported CSS commanders, and the military police must coordinate plans for defending rear area installations and activities. As the reaction force, the antiarmor company provides security, destroys known enemy forces in the area, and provides primary combat power to the rear area.
- b. **Role of the Reserve.** The firepower and mobility of the TOW company or team enable it to act as a reserve. Reserves are concerned with rear operations, counterattack, and relief operations. At battalion level, reserve forces are those that are neither engaged nor assigned as a dedicated reserve. Dedicated reserve companies are those that must be ready for action at any time.
- c. **Security Operations.** Counterreconnaissance, a subtask of security, prevents the enemy from detecting and observing a force, area, or place through

visual, electronic, sonic, or other means. The security or counterreconnaissance force prevents the main body from being observed or surprised by an enemy attack or reconnaissance probe. Security operations are conducted forward, to the flanks, or to the rear of the battalion. The company assigned a security operation can screen the battalion from great distances. Ideally, the antiarmor commander can coordinate counterreconnaissance. By placing scouts, tanks, and TOWs under the antiarmor commander's control, the battalion commander obtains a unified counterreconnaissance operation. He uses scouts to identify the composition and direction of movement of the enemy reconnaissance. Then he can use the tank and TOW assets to fix, fight, or delay the enemy. This gives the battalion the time and space to position forces to fight the enemy. The success of this task requires habitual relationships and extensive training. The battalion commander should also consider what CSS assets are available to support the mission.

G-18. TACTICAL ROAD MARCH

The antiarmor company often moves long distances by road march into positions for a future operation.

- a. Success of a road march depends on a good company SOP and detailed planning. Certain tasks are standard in any road march and should be included in the SOP. These tasks are as follows:
 - (1) List all vehicles by march serial and bumper number.
 - (2) Designate a marshaling or staging area to organize the column and conduct final inspection and briefings.
 - (3) Lay out the route to include start point, checkpoint(s), and release point. Include critical areas, defiles, choke points, rest and maintenance stops, and other areas of danger or potential difficulty.
 - (4) Organize, brief, and dispatch the quartering or reconnaissance party. Have it drop off guides or mark the route for the main body.
 - (5) Assign the best map reader to the lead vehicle.
 - (6) Thoroughly brief everyone in the company.
- b. The main road march techniques are open and close column.
 - (1) **Open column.** This technique is used for daylight marches. It can also be used at night with blackout lights or thermal-vision equipment. Though the distance between vehicles varies, depending on road conditions and weather, it is normally 50 to 100 meters.
 - (2) **Close column.** This technique is used for marches in darkness or limited visibility. The distance between vehicles is about 25 meters, or near enough that vehicle drivers can see the blackout markers on the vehicles directly in front of them.

G-19. ASSEMBLY AREA OPERATIONS

The company uses an assembly area to prepare for future operations. Though this area is not a battle position, it should be located on easily defensible terrain and should be planned like a defensive position.

- a. **Concept.** A well-planned assembly area offers concealment, good routes in and out, security from ground and air attack and observation, and good drainage. Wheeled and tracked vehicles must be able to move with ease, even in a wet environment.
- b. **Quartering Party.** A quartering party includes the company XO or first sergeant, a security element (if the tactical situation requires), and one or two representatives from each platoon. The security element should consist of two combat vehicles from the same platoon. Each platoon should have an NCO (preferably platoon or section sergeant) and a representative soldier. The quartering party must—
 - (1) Reconnoiter the area for enemy forces, route condition, adjacent terrain, and NBC contamination. If the area is unsatisfactory, the party contacts the company commander and requests relocation (FM 5-36).
 - (2) Organize the area based on the commander's guidance by designating platoon areas, the command post, and the trains area.
 - (3) Mark vehicle locations and guide vehicles into locations.
- c. **Unit Actions.** The company should occupy part of a task force assembly area, but rarely should the company be assigned a separate area. TOWs should be positioned within the assembly area to cover mounted avenues of approach, and the infantry should secure the dismounted approaches. In the assembly area, the commander should issue his orders, and the company should—
 - (1) Conduct maintenance (weapons, vehicles, and soldiers).
 - (2) Resupply, refuel, and rearm.
 - (3) Rehearse the upcoming operation.
 - (4) Verify weapon system status by conducting system checkout procedures and preventive maintenance checks. If the location allows, it should also test-fire the weapon system.
 - (5) Eat and rest.

Section IV. FIRE CONTROL

Controlling antiarmor fires against an attacking armored force is vital. This section discusses some of the fire control techniques available to the company commander.

G-20. PRINCIPLES OF FIRE CONTROL

The commander seldom has time to give his subordinates detailed instructions. He must establish a reliable SOP for distribution of fires. Two factors are critical to fire control during the first few minutes of battle the procedures contained in the SOP and the initiative of subordinate leaders. After that, leaders can redistribute fires when they have time. The following specific principles guide fire control:

- a. **Cover Targets.** Fires from antiarmor weapons should be distributed so that they cover all targets. Proper distribution saves ammunition and increases the number of kills antiarmor weapons can achieve.
- b. **Avoid Target Overkill.** The company cannot afford to engage one target with more than one weapon. They should strive for one-on-one engagements and one-shot kills.
- c. **Fire First, Fast.** Accuracy is important in battle, but firing accurately *and* first are more important. When opponents with similar capabilities fight, the side that fires has better odds. When friendly units see the enemy but are not seen, they can choose the best moment to fire. Placing fire in the enemy's area lessens his effectiveness and allows friendly weapons time to adjust. Antiarmor weapons should engage the enemy rapidly and continuously.
- 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 present a greater threat than ATGMs. If antiarmor weapons cannot engage all targets, they should suppress some and destroy the rest of those they can engage.
- 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, thus rendering itself ineffective for later ones. The unit should check its ammunition supply constantly. SOP should establish the level at which each unit must be resupplied. However, resupply should be frequent—no unit should drop below the level set by the SOP except for an emergency or to protect itself.

G-21. COORDINATION OF COMPANY FIRES

The antiarmor company commander coordinates the fires of his platoons with other fires based on the battalion plan. To do this, he gives his platoon leaders the following information:

- a. **Platoon Positions on the Battlefield.** The commander selects platoon positions after he assigns engagement areas or sectors of fire to his platoons. He gives each platoon its primary position and, in some cases, its subsequent positions. He chooses initial positions to allow platoons to integrate their fires. He chooses subsequent positions where, if enemy actions drive them from their initial positions, the platoons can continue firing into an engagement area. He uses subsequent positions to reposition platoons to fire into different engagement areas or sectors.
- b. **Primary Sector of Fire.** The commander assigns each platoon a primary sector of fire to cover from its primary position. This ensures mutual support (overlapping fires) between adjacent platoons and reduces target overkill.
- c. **Secondary Sector of Fire.** The commander assigns each platoon a secondary sector of fire to reinforce the fires of another platoon. On order, the platoon shifts fire to its secondary sector. This occurs either if the primary sector contains no targets or if a platoon in another sector must move and requires covering fire.
- d. **Engagement Areas.** The commander uses engagement areas to mass the fires of his platoons into one target area. The company commander may use target reference points (TRPs) to divide engagement areas into sectors of fire.
- e. **Target Reference Points.** The commander designates TRPs to identify targets and distribute the fires of his platoons. Since platoons engage from different directions, the commander uses compass points (rather than "left" or "right") to give directions relative to TRPs.

G-22. ENGAGEMENT PRIORITIES

Armor formations present varied targets: tanks, APCs, air defense weapons, or artillery, for example. To ensure platoons rapidly and effectively distribute their fires, the antiarmor company commander can assign each platoon a particular type of target to engage first.

Section V. PROCEDURES

This section discusses procedures, which are standardized actions conducted IAW a company's SOP. The antiarmor company commander must first establish security, then he can establish his company's priority of work.

G-23. SECURITY

The commander should establish observation posts and assign local patrols to search for enemy stay-behind forces, sensors, mines, or booby traps. Patrol teams should also reconnoiter any terrain that enemy reconnaissance units could use to call for and adjust indirect fire or to direct enemy maneuver units. The patrol teams can protect emplaced obstacles, cover dead space between units, or cover dismounted avenues of approach. To establish security, the commander must—

- a. Emplace PEWS in dead space or between units, to complement the efforts of patrols (when units are augmented by an infantry platoon).
- b. Position chemical detection alarms upwind from the platoon's position. Perform periodic checks and maintenance on the alarms; move them if wind direction changes.
- c. Position key weapon systems. (The platoon leader positions the ITVs.)

G-24. PRIORITY OF WORK

The commander should establish a priority of work to help his company use time efficiently. Though this should already be part of the SOP, he can modify it to fit the mission. In most situations, the priority of work is as follows:

- Establish security (as previously discussed).
- Position weapon systems.
- Clear fields of fire.
- Prepare range cards.
- Prepare firing positions. (Leaders inspect positions in stages as they are constructed.)
- Emplace obstacles.
- Establish local communications.
- Stockpile ammunition, food, and water.
- Perform maintenance rest.
- Coordinate between adjacent units.

G-25. POSITIONING OF TOW VEHICLES

Enemy vehicles are most heavily armored in the 60-degree arc to the front, so friendly antiarmor units must try to engage each enemy vehicle from its flank or rear. Though the angle of engagement is important, targets normally are engaged when they appear. Therefore, leaders must position TOW vehicles where flank engagements are most likely to occur. This means fighting positions must be placed to the flank of enemy avenues of approach. Battlefield dust, smoke, fog, and darkness normally limit observation and fields of fire. When engagement ranges are reduced, flanking fires, obstacles, mutual support with infantry, and covered and concealed positions increase in importance. Due to battlefield obscurity, weapons must be positioned as they would be to fight during limited visibility, or they must be positioned where they can quickly move to limited visibility positions. The following positions may be used by TOWs:

- a. **Defilade Positions.** These are classified as either turret defilade or hull defilade positions. A turret defilade position uses terrain to mask the ITV; only the 3-power acquisition sight is exposed to the enemy. A hull defilade position uses terrain to mask the hull of the ITV; the ITV turret is revealed only as much as necessary to engage targets.
- b. **Flank Positions with Restricted Fields of Fire.** Leaders must position TOW vehicles on the flanks of expected enemy avenues of approach. In restrictive terrain, this provides opportunities to engage the enemy from narrow, sectors of fire that protect the TOW vehicles from overmatching enemy fire. They are only vulnerable to their current targets, and as soon as these are destroyed, the TOW vehicles move quickly to new firing positions (Figure G-11).

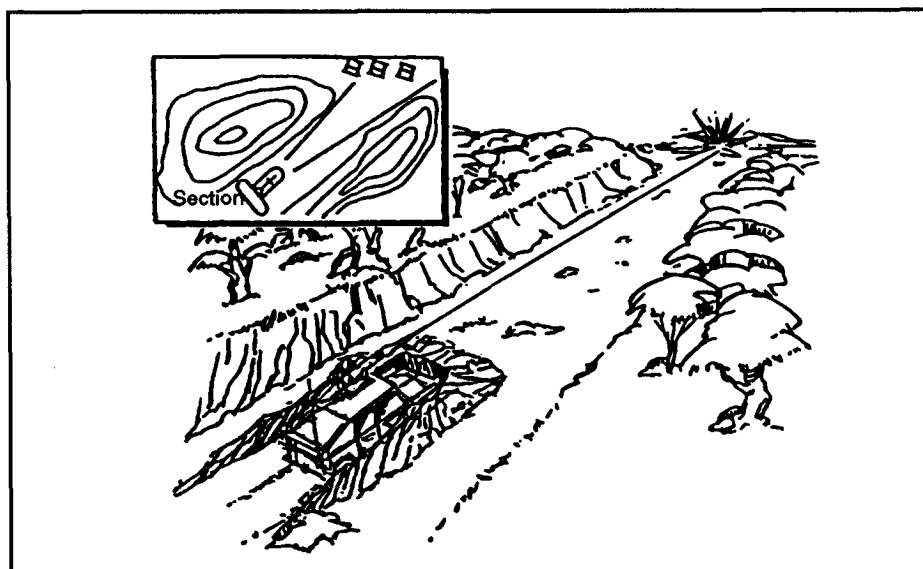


Figure G-11. Flank positions with restricted fields of fire.

- c. **Hide Positions.** Hide positions are where a soldier, vehicle, or unit can remain completely unexposed to observation or direct fire. TOW vehicles hide where they can observe part of the enemy's expected avenue of approach. They hide behind small terrain features rather than behind constructed berms, which must be more than 20 feet thick to be effective. Also, berms allow the attacker to more easily spot a defender's hide position. Backdrops that catch the eye should be avoided—for example, an ITV or BFV positioned near a large boulder or other prominent terrain feature will usually be detected. Hide positions must be chosen so that vehicles moving into and out of them are covered. The availability of such covered routes and the quality of the hide positions as firing positions share equal importance. To avoid creating diesel or dust signatures, weapons must be moved carefully into hide positions. Primary and alternate TOW positions should be at least 75 meters apart. Also, the greater the dispersion (in width and in depth) between them, the lower the chance that both will be suppressed or that the detection of one will give the other away. Just as it would from other positions, the TOW engages an enemy vehicle as soon as it appears. To engage a different part of the enemy's formation, the TOW vehicle must move around the terrain feature (Figure G-12). Using such limited fields of fire can be considered a fire control measure, because it also limits multiple engagements of the same target.

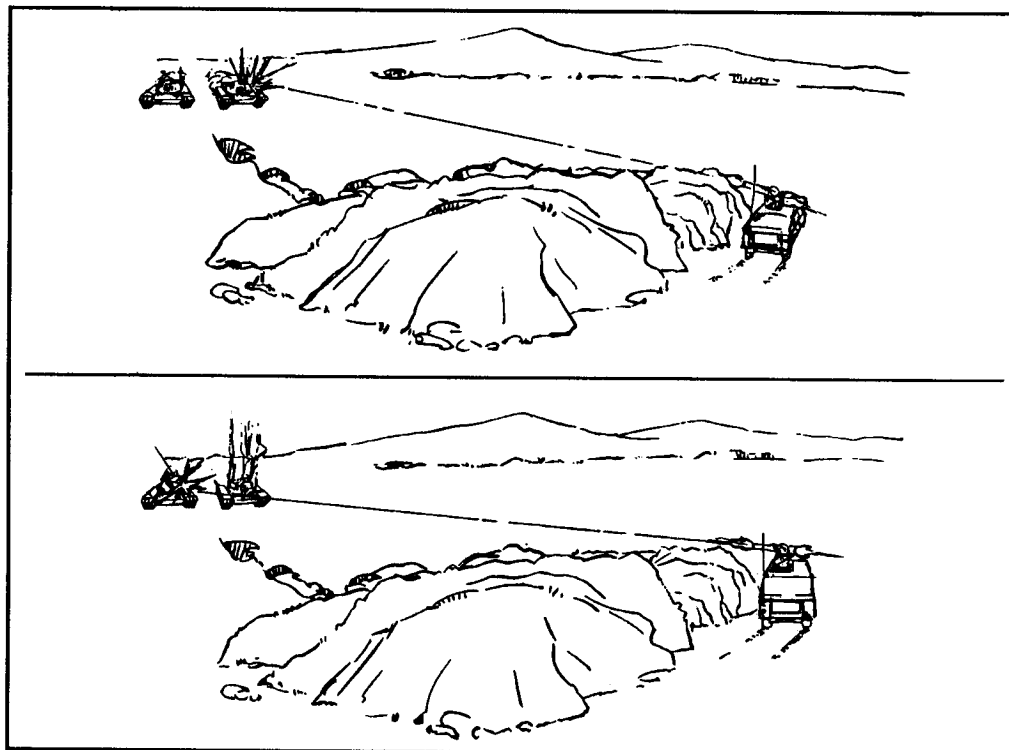


Figure G-12. Hidden position with smaller fields of fire.

G-26. TYPES OF TOW MISSILES

Several models of TOW missile have been fielded since its development. This paragraph discusses the differences between them. Some have a maximum range of 3,000 meters; others have a maximum range of 3,750 meters. Many of the later models have an expendable probe. Figure G-13 lists the different TOW missiles by type, designation, maximum range, and warhead.

TYPE	HEAT	INERT PRACTICE	MAXIMUM FLIGHT RANGE (METERS)	WARHEAD	COMMENTS
Basic TOW	BGM 71A	BTM 71A	3,000	5-inch unitary	
Basic TOW	BGM 71A-1	BTM 71A-1	3,000	5-inch unitary	
Basic TOW	BGM 71A-2	BTM 71A-2	3,750	5-inch unitary	*
Basic TOW	BGM 71A-3	BTM 71A-3	3,000	5-inch unitary	**
Improved TOW	BGM 71C	None	3,750	5-inch unitary with probe	
Improved TOW	BGM 71C-1	None	3,750	5-inch unitary with probe	
TOW 2	BGM 71D	None	3,750	6-inch full-caliber with probe	***
TOW 2A	BGM 71E	None	3,750	6-inch tandem with probe tip charge	** ***
TOW 2B	BGM 71F	None	3,750	Flyover, shoot-down, top attack	
<p>* The missile ordnance inhibit circuit (MOIC) prevents delayed-flight motor ignition, which causes an uncontrolled missile.</p> <p>** This denotes ECM-resistant when fired through a TOW 2 launcher or subsystem.</p> <p>*** The probe tip charge penetrates explosive reactive-armor boxes, allowing the main 6-inch warhead to penetrate the basic hull armor.</p> <p>TOW 2-series launchers should be used. The TOW 2-series missile can only be fired from the TOW 1-series launcher at a height of 6 to 9 feet from the ground.</p>					

Figure G-13. Fielded TOW missile types.

- a. **Characteristics.** The TOW missile can destroy targets at a minimum range of 65 meters and a maximum range of 3,750 meters. Five types of TOW missiles are as follows:
 - (1) **BGM-71C.** The I-TOW, an improved TOW missile, has a 5-inch unitary warhead. Its expendable probe provides detonation prior to warhead impact, which increases penetration.
 - (2) **BGM-71D.** The TOW 2 missile has a 6-inch full-caliber warhead. It also has an expendable probe to enhance penetration of armor, including applique armor.

- (3) **BGM-71E.** The TOW 2A has all the capabilities of the TOW 2 missile. However, an explosive charge in the tip of the probe detonates reactive armor, allowing the main warhead to penetrate a target.
 - (4) **BGM-71F.** The TOW 2B provides a flyover, shoot-down (top-attack) capability that allows the missile to penetrate the most vulnerable part of an armored vehicle—the top of the turret. The minimum-effective range of this missile is 200 meters.
 - (5) **BTM-71A.** The basic practice TOW has an inert warhead and is the standard training round.
- b. **Enemy Armored Protection.** Flank shots increase the probability of a single-shot kill and reduce the chance of detection or engagement by armor. Figure G-14 recommends missiles that should be used based on the type of threat, if METT-T conditions allow.

VEHICLE-TYPE TARGETS	TOW MISSILE SELECTION PRIORITY			
	FIRST	SECOND	THIRD	FOURTH
Tanks with applique armor	TOW 2	TOW 2A	TOW 2B	I-TOW
Tanks with explosive reactive armor	TOW 2B	TOW 2A	TOW 2	I-TOW
Tanks without applique or reactive armor	TOW 2	TOW 2A	TOW 2B	I-TOW
Lightly armored personnel carriers	I-TOW	TOW 2	TOW 2A	TOW 2B
Lightly armored wheeled vehicles	I-TOW	TOW 2	TOW 2A	TOW 2B
Antiaircraft vehicles	I-TOW	TOW 2	TOW 2A	TOW 2B
Armored vehicles in hull defilade position	TOW 2B	TOW 2A	TOW 2	I-TOW
Bunkers or fortifications	I-TOW	TOW 2	TOW 2A	—

Figure G-14. Missile selection.

- c. **Limitations.** FM 23-34 discusses the following firing limitations in detail:
- Firing over water.
 - Firing over electrical lines.
 - Firing in windy conditions.
 - Firing through smoke and area fires.
 - Firing from bunkers and buildings.
 - Clearance requirements.

Section VI. COMBAT SUPPORT

This section discusses how CS enhances and multiplies the effects of the antiarmor company's combat power. CS assets include combat engineers, intelligence (including reconnaissance), air defense, and fire support (mortars, field artillery, Army aviation, and tactical air).

G-27. ENGINEER SUPPORT

Engineer units provide support to the antiarmor company. The task force commander assigns their command or support relationships (FM 5-100). Combat engineers have the skills and equipment needed to enhance friendly mobility and survivability, to counter the mobility of enemy forces, and to sustain the force. Combat engineers provide three specific categories of support:

- a. **Mobility Support.** Combat engineers seek to improve movement of the forces and of critical supplies by reducing or eliminating the effects of enemy obstacles. (FMs 71-1 and 5-101 discuss methods of reducing obstacles.)
- b. **Countermobility Support.** Combat engineers construct new obstacles and reinforce existing (natural or man-made) obstacles to TURN, FIX, BLOCK, and DISRUPT the enemy. Obstacles increase the time for tracking targets and increase the effectiveness of direct-fire and indirect-fire weapon systems. (FMs 71-1 and 5-102 provide information on constructing obstacles.)
- c. **Survivability Support.** Combat engineers construct protective positions, including hull defilade and dug-in positions and overhead protection, to reduce the effectiveness of enemy weapons. (FM 5-103 provides detailed information on survivability planning.)

G-28. INTELLIGENCE AND RECONNAISSANCE SUPPORT

Most of the information about the enemy comes from S2 intelligence reports, scout platoon reports, and personal observations. Other information about the enemy and area of operations is available from adjacent and supporting units. The battalion S2 provides information about the enemy, terrain, and weather. The company commander is the antiarmor company intelligence officer. He seeks information about the enemy, terrain, and weather from all available sources.

G-29. AIR DEFENSE SUPPORT

Enemy air forces with attack helicopters and high-performance (jet) aircraft may gain local air superiority and pose a danger to US ground units. An antiarmor company with no air defense artillery (ADA) system must defend itself against an air attack. It may take active or passive measures to do so.

- a. **Active Measures.** Company SOP designates soldiers or vehicles to watch for enemy aircraft in assigned sectors. To alert their unit, observers use flag signals, arm-and-hand signals, or audible signals. Enemy aircraft normally fly low and often fly down valleys. Enemy helicopters can appear from behind hill masses and engage at long ranges. If an enemy aircraft attacks, friendly units return fire. However, unless the aircraft is attacking the company, the antiarmor company should withhold fire and use passive defensive measures. (FM 44-8 provides more information about active air defense measures.)
- b. **Passive Measures.** An enemy pilot must see a target to engage it. Friendly units use cover and concealment to degrade the enemy's ability to acquire them as targets. (FM 5-20 provides more information on camouflage; FM 44-8 provides more information on passive air defense measures.) The following signatures identify friendly positions to enemy airmen:
 - Wheel or track marks, especially if they are obviously fresh.
 - Reflective surfaces such as windshields, headlights, goggles, map cases, field glasses, and sunglasses.
 - Smoke, exhaust plumes, dust, lights, and contrasting colors.
 - Movement.
 - Freshly exposed dirt around a fighting position.

G-30. FIRE SUPPORT

Fire support is the collective and coordinated use of indirect-fire weapons and armed aircraft in support of a tactical plan. Fire support sources include mortars, field artillery cannons and multiple-launch rocket systems (MLRS), Army aviation, CAS, and NGF. These means should be used to support the scheme of maneuver and mass firepower as well as to delay, disrupt, or destroy enemy forces.

- a. The commander must know what the FA and mortars can do. Also, he must know the fire support system and be able to plan and use indirect fires as effectively as he can the company's organic weapons. He must also direct the company's movement. Company and battalion fire support officers are available to advise the commander on the use of fire support, including mortars, FA, Army aviation, CAS, and (if available) NGF.

- b. Fire support destroys, neutralizes, and suppresses enemy weapons, formations, or facilities. Smoke obscures the enemy's vision, degrading the effectiveness of his direct-fire and indirect-fire weapons. High-explosive ammunition and dual-purpose improved conventional munitions (DPICM) cause enemy tanks and other armored vehicles to button up and slow down. This reduces the enemy's observation, flexibility, momentum, and ability to command and control. A technique is to mix smoke and HE effects in a target group. In the defense, the antiarmor company should fire mixed munitions at and beyond the phase line to disorient the enemy and to allow TOW gunners to engage Threat vehicles within the designated engagement area. (FM 7-90 provides additional information on the mortar platoon; FMs 6-20 to 6-20-40 and TC 6-71 provide additional information on fire support planning.)