



LIGHT/HEAVY OPERATIONS

Tanks never fight alone. Open terrain such as desert, plains, and flat countryside is conducive to the employment of massed armor formations. In such terrain, mechanized infantry supports the forward movement of the armor units by providing local security, retaining key terrain, clearing dug-in enemy positions, and enhancing direct fires with organic small arms and antitank fires. On the other hand, restrictive terrain (such as built-up areas, forests, and jungles) increases the vulnerability of armor units. In such terrain, it is more advantageous for tanks to take a supporting role in the forward movement of the infantry. Armor provides close-in direct fire support against hard and soft targets that could slow the infantry's advance.

Regardless of terrain, infantry and armor units fight as part of a combined arms team to maximize their respective capabilities and minimize their limitations. The principles of offense, defense, and movement discussed in Chapters 3, 4, and 5 are applicable. This chapter examines in detail how the tank platoon is employed to support the advance of dismounted infantry.

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Section I. TASK ORGANIZATION

When an armor unit is task organized to support infantry, the mix of units is referred to as light/heavy. For example, light battalion/heavy platoon refers to a light infantry battalion supported by a tank or AGS platoon; this is the most common type of light/heavy task organization. Light company/heavy section refers to a light infantry company supported by a tank or AGS section. (**NOTE:** Conversely, a heavy/light operation is one in which the controlling headquarters is a heavy unit, either armor or mechanized infantry, with light infantry in support.)

Task organized to support a light infantry battalion task force, armor platoons generally perform in one of several ways: as the primary maneuver element (main effort); in a direct fire support role when infantry is the primary maneuver element; or as part of the task force reserve, often with a reactive role in an antiarmor defense (AAD) mission. The commander bases his decision on which method to use on METT-T factors. (**NOTE:** In

some situations, the armor platoon also may be used as a separate special platoon, or it may be attached to one of the infantry companies for direct support.)

The platoon is the lowest level at which the armor leader must be trained to interact with a controlling headquarters. The platoon leader must act as the armor force advisor to the battalion commander. He must rely on the infantry staff for immediate CS and CSS. If the platoon's parent company is in the vicinity, he may be able to coordinate some assistance through the company commander or XO; however, this support may not be available.

It is important that the armor platoon leader understand the infantry unit he supports; this generally will be a light infantry, air assault, or airborne battalion. Characteristics of these battalions vary by the composition and mission of the forces involved, as discussed in the following paragraphs.

Light Infantry Battalion

This is the most austere conventional combat battalion. The light infantry battalion has only three rifle companies and a headquarters and headquarters company (HHC). Of the three types of infantry units described in this section, the organization of the light infantry battalion differs most from that of the armor battalion.

There are also differences among this battalion and the air assault and airborne battalions, the greatest being the organization of support and logistics. The light infantry battalion has no trucks larger than its 27 cargo HMMWVs. There is only one mechanic in the entire battalion; repairs are handled at brigade level. The battalion has only 18 long-range radios. It has limited antiarmor capability: 4 HMMWV-mounted TOW systems in one platoon at battalion level and 6 Dragon (Javelin) launchers at company level.

Air Assault Battalion and Airborne Battalion

The air assault battalion and airborne battalion are similarly organized, with three rifle companies, an antiarmor company (with five AT platoons of four vehicles each), and a headquarters company. Tactical movement for both is usually accomplished by a combination of air insertion and foot marches. A major difference is in the number and types of wheeled vehicles available in each type of battalion.

The air assault battalion has six 5-ton cargo trucks and 45 HMMWVs. There is a mess section and a 17-person maintenance platoon. Communications are served by 29 long-range radios. In the line companies, AT capability is provided by a Javelin- or Dragon-equipped section within the company headquarters.

Once inserted, the airborne battalion performs tactically much like a light infantry battalion; walking is the principal means of transportation. The battalion does have 10 2-1/2-ton trucks and 36 cargo HMMWVs, allowing it to execute nontactical movement by truck. It has a mess section and a 16-member maintenance platoon. The airborne battalion has 30 long-range radios. Its rifle squads also have antiarmor capability.

Section II. LIAISON

Light/heavy operations demand effective coordination between the armor platoon and the infantry unit it is supporting. The tank platoon leader's first responsibility is to have a thorough tactical and technical knowledge of his tank's systems and its logistical needs; he must understand its capabilities as well as its limitations (see Chapter 1). Based on these factors, he then works with the infantry commander and S3 to formulate plans to support the infantry. They maximize use of the tank's capabilities for lethal firepower, enhanced target acquisition (including night sights), and effective armor protection; the most common limitations they must overcome are the tank's relative lack of mobility and the need for close-in security in restrictive terrain situations and OOTW environments.

Besides understanding the capabilities and limitations of his tanks, the armor platoon leader must appreciate the tactical assets and liabilities of the infantry. He must realize that infantry moves much more slowly than tanks over certain types of terrain; at the same time, he will learn that infantry can use terrain extremely well to gain a positional advantage over the enemy and that terrain has a direct impact on survivability for the infantryman. The tank platoon leader must ensure the controlling infantry headquarters understands that considerations for positioning and control of the tank's crew-served direct fire weapon systems are the same as those for the infantry's crew-served and AT weapons. In addition, he must be able to anticipate the effects of his weapon systems on both friendly and enemy forces; for example, he must remember that SABOT ammunition cannot be fired over the heads or flanks of unprotected infantry because of the danger created by the discarding sabot petals and the concussion of the main gun.

Finally, light/heavy liaison must emphasize the need for combined arms training. Armor and infantry must train together, or they will not be able to execute combined arms operations smoothly in combat. Ideally, this training is conducted prior to deployment; to enhance coordination and execution, however, light/heavy forces must take advantage of every training opportunity that arises.

Section III. OPERATIONAL CONSIDERATIONS

The following considerations apply when the tank platoon operates in support of dismounted infantry.

COMMAND and CONTROL

As previously discussed, the armor platoon leader becomes the principal advisor to the infantry battalion commander regarding the employment of his tanks. They may consolidate the platoon to provide a larger antiarmor force; in some instances, the platoon or a section may be placed OPCON to support a company. (**NOTE:** A section should normally be OPCON to a company for only a limited time to accomplish a specific direct fire support mission. In longer-duration operations, the logistical demands of the armor section would overwhelm the separate infantry company's CSS capabilities.)

The tank platoon leader and PSG maintain communications with the controlling infantry battalion headquarters. When attached at lower levels, the platoon leader or PSG gains and maintains contact with the company commander and talks to other platoon leaders on the company net. Individual tanks and dismounted infantry communicate with each other using one of these techniques:

- Visual **signals**. Visual signals, either prescribed by SOP or coordinated during the linkup, will facilitate some simple communications.
- Wire. M60A3 and M8-AGS crews have telephone boxes on the rear of their vehicles for communicating with dismounted infantrymen. M1-series crewmen can route WD-1 wire from the AM-1780 through the loader's hatch or vision block and attach it to a field phone on the back of the tank.
- Hand-held **radios**. Infantry squad radios or other short-range hand-held radios can be distributed during the linkup to provide a reliable means of communications between infantry and supporting TCs. These radios allow the infantry to use terrain more effectively in providing close-in protection for the tank; infantrymen can watch for enemy elements while limiting exposure to enemy fires directed against the tank.
- **FM radio**. The infantry platoon leader uses his SOI information and contacts the supporting tank on the tank platoon frequency. This is a fast, reliable method of communications that does not require any additional assets.

Intelligence

The platoon leader must obtain information from the battalion S2 on enemy capabilities, especially those of antiarmor assets. He should focus not only on direct fire capabilities, but also on the capacity of the enemy's mines, artillery, and mortar fires to disable his vehicles.

Terrain analysis is another area of supreme importance in which the platoon leader must work closely with the S2. They determine trafficability of the terrain, examining the effects of weather, obstacles, and limited visibility on the speed and mobility of armored vehicles. Following this detailed analysis, TCs and section leaders conduct a ground reconnaissance of the area of operations. The reconnaissance confirms the trafficability of routes and aids in the effective positioning of weapon systems. The terrain analysis and

subsequent reconnaissance also confirm whether the platoon needs to employ ground guides who are knowledgeable of the terrain

Maneuver

When operating with infantry, the tank platoon may execute missions "pure," either on its own or as part of a tank company. In such a situation, the platoon executes reserve/reaction force missions, attacks separate objectives, or supports the advance of infantry with close-in direct fires. Either the tanks or the infantry can lead. The following discussion of moving with infantry covers a situation in which terrain and

In situations when the infantry leads, the tank platoon can be employed in one of three ways:

- It can remain stationary at the battalion or company CP until called forward.
- It can follow and support the infantry, staying close enough to provide direct fire support when requested.
- During company-level tactical movement, it can overwatch the forward movement of the infantry from stationary positions.

Infantrymen conduct tactical movement until they identify an enemy force that halts their progress (see Figure B-1). They deploy into position, suppress enemy AT weapons with direct and indirect fires, and request tank support to destroy the enemy. The tanks move forward and link up with the infantry (see Figure B-2). At the linkup point, the tank platoon or section leader (depending on the size of the supporting armor element) dismounts and coordinates the following information with the infantry leader:

- Enemy disposition.
- Friendly disposition.
- The tentative maneuver plan.
- Any additional tactical information not already covered in the OPORD or maneuver plan, including the use of guides, control of direct and indirect fires, close-in protection for the tank, and communications and signal information.

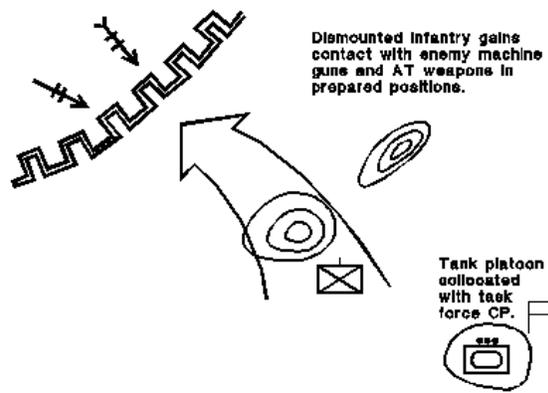


Figure B-1. Infantry leads while tank platoon remains stationary.

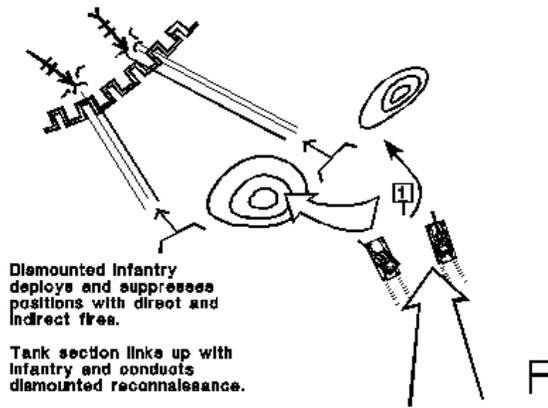


Figure B-2. Tanks move forward to link up with infantry.

The armor leader conducts a ground reconnaissance of the route to the final firing position and finalizes the plan with the infantry leader. He then returns to the platoon or section and briefs the plan to his crewmen.

Depending on task organization and terrain factors, the platoon or section moves forward to the firing position, using guides provided by the infantry (see Figure B-3). If the entire platoon is involved, one section overwatches the movement of the lead section to the

firing position. If a single section is used, the trail vehicle must overwatch the movement of the lead vehicle to the firing position.

Depending on the amount of suppressive fires received, the firing tank may move to the position buttoned up, with the ballistic doors closed (M1A2 crews may stow the CITV). This provides better protection for the crew and helps to prevent damage to the gunner's sights; at the same time, however, it degrades the tank's target acquisition capability and makes it easier for dismounted enemy forces to attack the tank with small arms or machine gun fires.

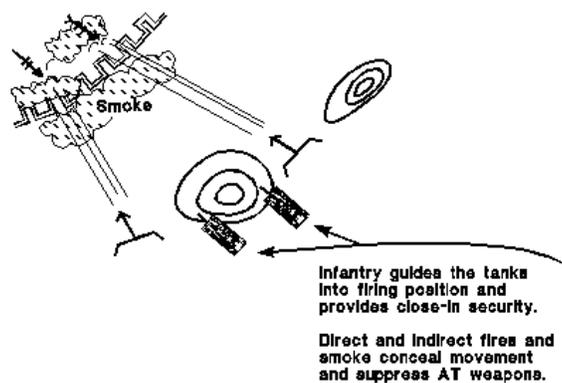


Figure B-3. Infantry guides tanks to firing position.

If tank crews cannot immediately identify targets when they reach the firing position, the infantry designates each target using tracers, smoke grenades, or grenades fired from the M203 grenade launcher. TCs open the ballistic doors as necessary to acquire and laser to their targets; tanks then suppress or destroy targets using main gun or machine gun fire. When targets are destroyed, the infantry signals the tanks to cease fire (see Figure B-4).

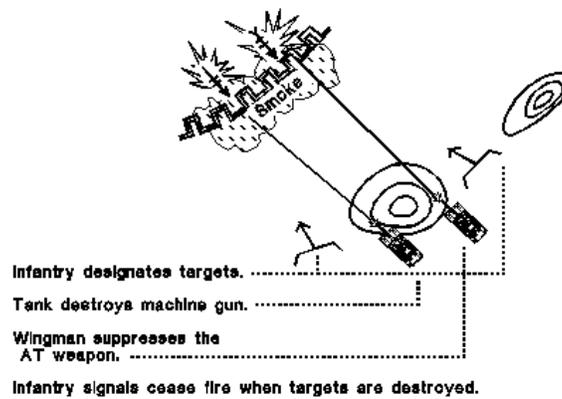


Figure B-4. Tanks destroy enemy targets.

Certain situations may require that tanks lead the infantry; this is, however, the least preferred method of light/heavy employment. Tanks must move very slowly when they lead infantrymen (approximately 2 1/2 miles per hour). This hinders their ability to use speed as a survivability tool.

In addition, restrictive terrain severely limits the mobility of the tank platoon. It further increases the platoon's vulnerability by limiting visibility for tank crews. Without the aid of infantrymen serving as guides and providing security, tanks have a much greater chance of becoming stuck in close terrain or of being the target of enemy fires. In these situations, the infantry must provide close-in protection and early warning against dismounted and mounted threats.

When tanks lead, the infantry's antitank assets should stay close enough to overwatch them during tactical movement. Tank crews maintain constant communication with the infantry so they do not outrun the ground force. The infantry maintains a standoff distance to prevent injury from the "splash" and ricochet of enemy AT weapons and small arms fire aimed at the tanks. Additionally, the light/heavy force can expect tanks to attract the attention of mortar and artillery gunners. The enemy will use indirect fires to strip away supporting infantry and to force tank crews to button up, further reducing their ability to acquire targets. All armor and infantry leaders must plan actions to counter the effects of these fires.

Fire support

The use and control of indirect and direct fires are critical to the effective employment of armor with infantry.

Indirect fires are used to suppress enemy AT weapons and dismounted infantry in the area of operations. The tank platoon uses its optics to detect targets and its communications systems to initiate calls for fire in support of infantry. In addition, the

noise of mortar and artillery fires, combined with the use of smoke, helps to conceal the movement of tanks moving forward, adding the element of surprise to the operation.

One of the primary assets of armor in working with infantry is its ability to provide accurate, lethal direct fires from a mobile, survivable platform. The weapon systems on each tank in the Army inventory (including the AGS) offer unique capabilities and limitations that must be considered in relation to infantry support; these characteristics are discussed in the "bullets" on the following page. The TC's caliber .50 machine gun is effective against both personnel and materiel. The coax machine gun is an effective antipersonnel weapon. The capabilities of the main gun vary depending on the vehicle. All current tanks fire SABOT and HEAT rounds. These have great penetrating power against armored vehicles, but may not have the destructive capability necessary to destroy prepared fighting positions or penetrate walls in built-up areas. Not all tanks can fire WP, high explosive plastic (HEP), and beehive rounds. WP is an effective antipersonnel, antimateriel, and antibunker weapon because of the "splash" of phosphorus on the target. Additionally, the round is effective in marking targets for CAS. HEP has enough destructive power to destroy most prepared positions and to create large holes in walls. The beehive is an antipersonnel round that is extremely effective for area suppression.

The Army's tanks have the following firepower capabilities and limitations:

- M60A3. This vehicle fires all main gun ammunition discussed in the preceding paragraph. Its capabilities are enhanced by the large onboard storage capacity of main gun rounds (63). The M85 caliber .50 caliber machine gun can be fired by the TC while buttoned up. The M60A3 1). Major limitations of this vehicle are its large silhouette and lack of mobility in terrain that does not support heavy tracked vehicles.
- M1. terrain that does not support heavy tracked vehicles.
- M1A1 and M1A2. Both vehicles are limited in ammunition storage capacity (40 rounds in the M1A1, 42 in the M1A2). They can fire SABOT, HEAT, and MPAT ammunition; however, rounds that are more effective for infantry support, such as HEP, WP, and beehive, are not available. The M1A1 TC can fire the M2 caliber .50 without exposing himself; the M1A2 TC must expose himself to fire the M2. Both vehicles consume fuel at a high rate, and their mobility is limited in terrain that does not support heavy
- M8-AGS. A key capability of this vehicle is that it fires all types of main gun ammunition. The AGS is smaller and lighter than the other tanks. This gives it a lower fuel consumption rate and makes it more mobile in terrain that does not support larger, heavier tracked vehicles. On the other hand, the AGS is limited in the number of main gun rounds it can carry (30), and the TC must expose himself to fire the caliber .50. In addition, the AGS provides less armor protection than do other tanks.

Mobility and Survivability

Although the mobility and survivability of the tank are well known, these capabilities suffer significantly when tanks are employed by themselves in close terrain. The following paragraphs list techniques the tank platoon can use to operate more safely and effectively under these conditions.

The following factors can help enhance the tank's mobility in restrictive terrain:

- Information **from the S2**. As previously discussed, the S2 must provide mobility information to the platoon leader.
- Ground **reconnaissance**. Ground reconnaissance by a knowledgeable individual (preferably the section leader or TC) will confirm or deny the S2's estimate.
- Ground **guides**. In restrictive terrain, the use of ground guides is critical in leading tanks to their firing positions, especially during periods of limited visibility. The ground guide can be either an infantryman or the section leader who conducted the reconnaissance.
- Knowledge **of vehicle capabilities**. The tank has an awesome ability to bull or force through walls, small trees (up to 12 inches in diameter), wire obstacles, and other hasty barricades such as cars or trucks blocking a road or trail. The addition of a mine plow enhances the tank's breaching capability, but also hinders movement in rough terrain.
- Engineer **support**. Engineers can enhance tank mobility by spanning unfordable rivers or gaps, reducing obstacles, and cutting down larger trees to construct hasty tank trails.

The survivability of the Army's tanks differs by system. They offer varying degrees of protection against small arms fire, time-fuzed artillery, and AT weapons, with the M60A3 at the low end of the survivability scale. The M8-AGS provides effective protection against small arms and time-fuzed artillery; various levels of protection, in the form of appliqué armor, can be added to the vehicle to increase survivability against light AT weapons. The tank platoon can enhance the survivability of the various systems using these techniques:

- Terrain **driving**. The old maxim still holds true: "What can be seen can be hit; what can be hit can be killed." Every potential enemy has the ability to employ weapons that can disable or destroy any tank. Terrain driving techniques, discussed in Chapter 3, are still extremely important for the tank platoon.
- Suppression. Suppression of enemy AT and dismounted infantry forces by artillery and close infantry support is critical.
- Overwatch. Wingman tanks or sections scan not only their sector of fire, but also the area around moving vehicles. This enables overwatch vehicles to fire their coax machine guns to protect the moving vehicles if they are attacked by dismounted forces.
- Moving **into the attack by fire position buttoned up**. When tanks move into an attack by fire position to engage a prepared enemy position, they

will face intense small arms, artillery, mortar, sniper, or AT fires. In addition to the factors listed previously, the survivability of the crew depends on its ability to take full advantage of the armor protection of the vehicle.

- o Having **individual weapons ready**. Crewmembers must be ready to use their M16A2 and 9-mm personal weapons, as well as grenades, to repulse close-in dismounted attacks.

Air Defense Artillery

ADA capabilities and employment considerations are discussed in Chapter 6.

Combat service support

When attached to infantry, the tank platoon must prepare to operate under austere conditions. The key to effective logistics support in this situation is to maintain a constant flow of reports updating the platoon's supply status and requirements. In an infantry task force, the tank platoon leader and PSG will do much of their logistical coordination directly through the battalion staff. They coordinate reporting procedures within the platoon and notify the staff when classes of supply fall below the levels of 80 percent (identified by the code word AMBER), 70 percent (RED), and 60 percent (BLACK). When a class of supply falls below 70 percent, the platoon leader or PSG requests resupply.

Fuel, ammunition, recovery, and maintenance are the primary concerns of the attached platoon. Other logistical needs are usually handled through the normal CSS functions of the battalion. These considerations apply:

- o Fuel. Fuel conservation must be a priority at all times. Engines should be shut down whenever possible. REDCON status should be used to help regulate engine start-up requirements and to assist in operational preparations. The tank platoon can normally support infantry operations for 24 hours before refueling.
- o Ammunition. The tank platoon's ammunition requirements present a unique challenge for the infantry battalion. The type of rounds requested should be based on the S2's analysis to fit the needs for direct fire support of the light/heavy mission. A basic load of ammunition should be on hand to provide for emergency resupply during periods of heavy contact.
- o Recovery **and maintenance**. When a tank is disabled, the platoon should first attempt self-recovery. If this is not possible, the crew makes the necessary coordination to secure the vehicle until recovery and maintenance personnel reach it. Infantry personnel can be employed to provide local security during recovery operations or to protect the vehicle as the attack progresses. Recovery and maintenance assets may be part of

the infantry battalion's attached slice within the brigade forward support battalion, or they may be on call from the tank platoon's parent company headquarters.

Section IV. TRANSPORTING INFANTRY

At times, the platoon leader may be required to transport infantrymen on his tanks (as illustrated in Figure B-5, page B-17). This is done only when contact is not expected. If the platoon is moving as part of a larger force and is tasked to provide security for the move, the lead section or element should not carry infantry.

Infantry and armor leaders must observe the following procedures, precautions, and considerations when infantrymen ride on tanks:

- Infantry teams should thoroughly practice mounting and dismounting procedures and actions on contact.
- Passengers must always alert the TC before mounting or dismounting.
- They must follow the commands of the TC.
- Infantry platoons should be broken down into squad-size groups, similar to air assault chinks, with the infantry platoon leader on the armor platoon leader's vehicle and the infantry PSG on the armor PSG's vehicle.
- Platoon leaders, PSGs, and team leaders should position themselves near the TC's hatch, using the external phone (if available) to talk to the TC and relay signals to the unit.
- Tank crewmen must remember that the vehicle cannot return fire effectively with infantry on board.
- Whenever possible, passengers mount and dismount over the left front slope of the vehicle. This ensures that the driver can see the infantrymen and that the infantrymen do not pass in front of the coax machine gun.
- Passengers must always have three points of contact with the vehicle; they must watch for low-hanging objects like tree branches.
- Passengers must ensure that they remain behind the vehicle's smoke grenade launchers. This will automatically keep them clear of all weapon systems.
- All passengers should wear hearing protection.
- Infantrymen should not ride with anything more than their battle gear. Rucksacks and B-bags should be transported by other means.
- Passengers should be prepared to take the following actions on contact:
 - Wait for the vehicle to stop.
 - At the TC's command, dismount **IMMEDIATELY** (one fire team on each side). **DO NOT** move forward of the turret.
 - Move at least 5 meters to the sides of the vehicle. **DO NOT** move behind or forward of the vehicle.
- If possible, the lead vehicle should not carry infantrymen. Riders restrict turret movement and are more likely to be injured or killed on initial contact.

- Infantrymen should scan in all directions. They may be able to spot a target the vehicle crew does not see.
- Passengers on the M8-AGS must stay clear of the vehicle's canister ejection device. Canisters ejected from the main gun can cause serious injury or death.
- **DO NOT** move in front of vehicles unless ordered to do so.
- **DO NOT** dismount a vehicle unless ordered or given permission to do so.
- **DO NOT** dangle arms or legs, equipment, or anything else off the side of a vehicle; they could get caught in the tracks, causing death, injury, or damage to the equipment or vehicle.
- **DO NOT** carry too many riders on the vehicle. Falls, burns, and clogged air intakes can result.
- **DO NOT** fall asleep when riding. The warm engine may induce drowsiness; a fall could be fatal.
- **DO NOT** smoke when mounted on a vehicle.
- **DO NOT** stand near vehicles during refueling and rearming.
- **DO NOT** stand near a moving or turning vehicle at any time. Tanks have a deceptively short turning radius.

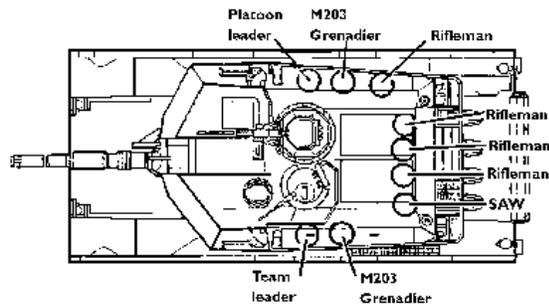


Figure B-5. Sample positions for infantry riding on a tank.