

# TRAINING NOTES



## KINGS OF THE ROAD

### *Heavy and Light Forces in MOUT*

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“An urbanizing world means combat in cities, whether we like it or not...We will fight in cities, and we need tanks that can fight and survive in the streets.”

— **Lieutenant Colonel Ralph Peters, U.S. Army Retired**  
in his book, *Fighting for the Future. Will America Triumph?*

*It is early in the morning; and in the dim twilight 1st Platoon is on the move. Advancing warily through the enemy-held city, the lead squad clears an abandoned building and peers across the empty street. The enemy is out there, somewhere, but remains hidden. After setting up a hasty base of fire, 2nd Squad is ordered to assault across to the houses beyond. They are met with intense enemy fire. Soldiers lie motionless or crawl backward toward any cover they can find.*

*In the enemy strongpoint, the enemy commander awaits the Americans next move. At the end of the street, the high-pitched whine of a turbine announces the approach of American armor. The gun barrel of an MIA1 protrudes from behind a building, as the defenders scramble for smoke grenades, satchel charges and rocket launchers, and prepare to make their stand.*

With the increasing expansion of cities and urban sprawl throughout the world, fighting in urban areas and conducting military operations in urban terrain (MOUT) operations are an increasingly likely part of any future contingency mission. The presence of civilians on the battlefield restricts the use of artillery and aerial-delivered weapons, and the complexity of the three-dimensional terrain makes urban terrain among the most suitable for a defender facing U.S. forces.

Armored vehicles are some of the most lethal weapons available to a friendly commander. They are the most effective means to provide direct pinpoint fires at close range. The ability to integrate heavy and light forces is an important skill, vital in order to accomplish the mission. At the Joint Readiness Training Center (JRTC), heavy company teams are regularly integrated into the brigade fight at the Shughart-Gordon MOUT site. This article is a synopsis of some of the lessons learned while observing several

of these heavy-light task forces on the MOUT battlefield.

Unsupported armor is vulnerable during the close fight in cities and towns. Light infantry, while better suited for combat in urban areas, is vulnerable crossing open areas and building the combat power required to clear and secure enemy-held buildings. Historically, the most successful units in MOUT are those that utilize combined arms, with infantry platoon or company-sized formations centered on armor sections and platoons. Armor and infantry operating together mitigate each other's weaknesses and complement each other's strengths, a good example of synergy.

The role of armor in urban warfare can be significant. According to a study conducted by the U.S Marine Corps, armor participated in 21 of the 22 battles studied. In three-fourths of these battles, organic tank support was a central element when special assault teams were employed. Overall, special assault units supported by tanks were more successful than any other task organization.

Infantry advances from cover to cover. For the Soldier trying to fight and survive, cover and concealment are either excellent (inside a building) or nonexistent (in the open street). Infantrymen spend the majority of the battle inside buildings, and movement between buildings is at full speed, minimizing time in the open. Upon contact, infantry Soldiers must build combat power to suppress target buildings in order to assault. They must prevent defenders from effectively returning fire from the target building or immediately adjacent buildings. When a foothold is secured, infantry Soldiers go room to room, eliminating pockets of resistance. Targets for the infantry are acquired within 100 meters up to 95 percent of the time. Infantry units that maximize cover and concealment and stay dispersed can withstand large amounts of enemy firepower and should lead the way in the attack. In a well-trained platoon, most of the Soldiers would be inside buildings most of the time. The Soldiers seemingly disappear into the landscape, offering no targets for the defender.

For armor, finding cover and concealment is difficult. At the close ranges of MOUT, armor will be in the open where it can be seen and heard by hidden defenders. Tanks can destroy whatever they see, but will rarely be able to sneak up on defending infantry.

One of the chief threats is an infantry anti-tank team that cannot be seen. While the infantry worries about cover and concealment and requires suppressive fires and obscurity to advance, the armor force worries about security to the flanks, rear and top, but has more than sufficient firepower to suppress what it faces. While some techniques utilize armor as “infantry shields,” armor does not need to advance onto the objective. It is not important how close the tanks are to the target buildings, but it is important where their fields of fire are. Tank crews

advance their fields of fire, not their vehicles, up to the buildings and onto the enemy. If a tank can observe an enemy position, it will almost always be in effective range.

A relevant analogy is that of a car driving down a road at night. The driver uses his headlights to light his way. In areas where he feels less secure, he slows down. We would not drive without headlights relying on the lights of a car behind us. Similarly, without “light” we cannot observe, orient, and decide to act on what lies in our path. During MOUT, the infantry “lights” the way to identify enemy positions. They should normally lead when the enemy situation is vague. Armor provides the freedom of maneuver, killing the enemy where they are found. Pushing our ‘car’ faster than what is safe and too far ahead of its “light” will not get us where we need to go. When we see the enemy, like a hairpin curve in a road, it will too often be too late to react to the enemy on our own terms, therefore surrendering the initiative. At JRTC, it is common to see aggressive units trying to lead the way with armor in towns. While leading with armor may gain short-term success, the armor is usually heavily attrited in the process. Many times they become a combat liability as the brigade loses momentum, tanks, and lives. (See Figure 1.)

When infantry and armor move together, tactics change. Infantry squads are less dependent on fire and movement to

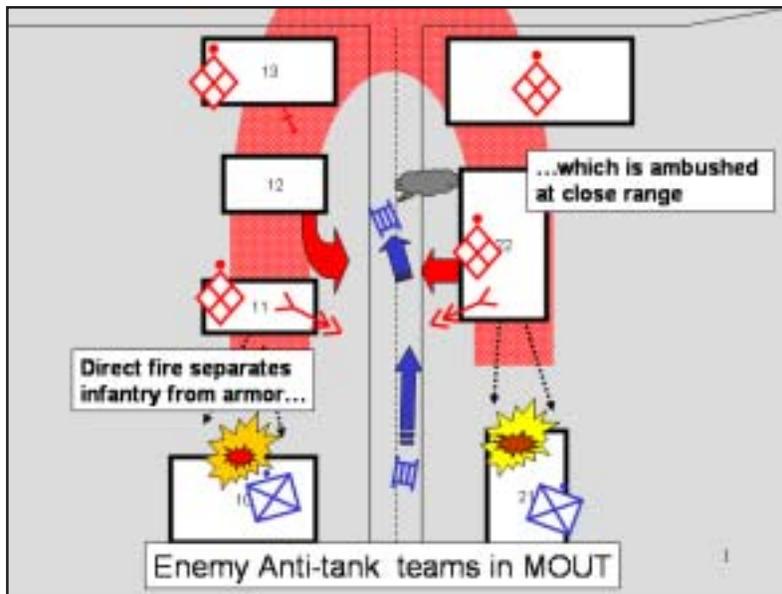


Figure 1

advance. Tanks generate the suppressive fire, while infantry provides security and observes to the front, flanks, and rear to protect the less-armored areas of the tanks from enemy anti-tank teams. It is security and movement, with tanks providing the fire, that allows the advance to continue.

Light forces move forward through buildings. They make initial contact, identify enemy positions, fix them in place, and go to ground. Tanks stay to the rear while overwatching the move. Security squads protect the tanks from rocket-propelled grenade (RPG) teams in the flank or rear. They should not be next to the tank, behind the tank, or in a nearby doorway looking at the tank. They should occupy the buildings alongside, scanning from the rooms and vantage points that face away from friendly vehicles. Early warning allows the infantry to engage any enemy RPG teams, or allows the armor to retreat, reorient, or engage. At close range, the 30 to 40 sets of eyes a rifle platoon brings to the fight are vital for covering to the flanks and rear. The infantry hunts; tanks kill. Whenever possible, armor should fight from within a moving perimeter that provides for its security.

In underdeveloped regions of the world, the RPG family of weapons is commonplace and used against a variety of targets. In Vietnam, Somalia and Afghanistan (both the Soviet experiences from 1979-1989 and the U.S. and Coalition experiences from 2001-present), RPGs have been used

against helicopters. In Mogadishu, they were employed as portable artillery against humvees, trucks and armored cars. Among irregular units, the RPG is an all-purpose weapon against tanks, vehicles, troops and helicopters — anything its five-pound explosive warhead can be used to good effect. They are cheap, easy to use, easy to obtain worldwide, and reliable. One of the most common versions, the RPG-7V, weighs in empty at 18 pounds, and fires a five-pound PG-7V grenade.

Unlike the U.S. AT-4, the RPG-7 is a reloadable weapon. A squad carrying two RPG-7s with three reload rounds each is carrying 76 pounds of equipment, 40 pounds of which is represented by the eight warheads. For the same amount of firepower a U.S. squad would have to carry nearly double the weight: 10 AT-4 launchers, each of which weighs 14.8 pounds. The RPG-7 is a lightweight source of considerable firepower. However, these weapons have short range and limited penetration.

The most dramatic example of an anti-armor defense in recent years came from the aborted Russian attack on Grozny, in the Republic of Chechnya, in December 1994. In the first month of the fighting, the Russians lost 225 armored vehicles. The lead brigade lost 100 out of 120 armored personnel carriers and 20 out of 26 tanks.

The following description is taken from *Russian-Manufactured Armored Vehicle Vulnerability in Urban Combat: The Chechnya Experience* by Lieutenant Colonel Lester Grau, U.S. Army Retired. An enemy defender facing an armored force in urban terrain will try to:

- Organize anti-tank hunter-killer teams, which include a machine gunner and a sniper to protect the anti-tank gunner by suppressing infantry, which is accompanying the armored vehicles.
- Select anti-armor ambush areas in sections of the city where buildings restrict

and canalize the movement of armored vehicles.

- Lay out the ambush in order to seal vehicles in the kill zone.

- Use multiple hunter-killer teams to engage armored vehicles from basements, ground level, and from second- or third-floor positions. Problems with the RPG-7 and RPG-18 anti-tank weapons are the back blast, signature and time lapse between shots. The Chechens solved the time-lapse problem by engaging each target simultaneously with five or six anti-tank weapons.

- Engage armored targets from the top, rear and sides. Shots against frontal armor protected by reactive armor only serve to expose the gunner.

- Engage accompanying air-defense guns first.

Following the battle, the Russians evacuated the wrecked vehicles to the Kubinka tank range, where they assessed the strengths and weaknesses of the vehicles. Several points can be made from the data they compiled:

- The Russian tanks had sufficient armor to survive hand-held weapons from the front, at ground level. The Chechen fighters mitigated this advantage by maneuvering to the flank, rear, or above the Russian tanks to knock them out

- Lightly armored vehicles, such as the BMP-2 were penetrated at all angles. Although engagement ranges are typically shorter in MOUT, the majority of small arms contacts come from within 100 meters. Vehicles that cannot survive hollow charge impacts are unsuitable for fighting in MOUT unless protected by reactive armor. Survivability is dependent on armor protection, not mobility. In the foreseeable future, this role is best suited for main battle tanks or similarly survivable vehicles.

- Tank survivability in MOUT is largely dependent on forcing the enemy infantry to engage friendly armor from shooter-target aspects where armor can withstand weapons impacts. Tanks

seek to position themselves where enemy fire is against their frontal arc, at ground level. 98 percent of the fatal hits against Russian tanks occurred in places unprotected by reactive armor. The Russians were incapable of preventing the Chechens from maneuvering to the flanks and rear, where such attacks were possible.

At the Joint Readiness Training Center, one of the greatest challenges facing the attacker is coordination between infantry and armor units. With the exception of Camp Casey, Korea, light infantry and armor units are not stationed on the same post and do not fall under the same division chain of command. As a result, brigade combat teams/task forces consist of units who meet for the first time in the initial planning phases, a mere three to six months prior to the rotation. They usually have few established SOPs. Worse, they will have no opportunity to really work on anything until the rotation. Frequently, tanks and infantry may be idling nearby while one or the other is engaged or destroyed. The tendency is toward centralization, with the heavy team fighting as a separate formation and infantry battalions fighting without armor support. This is an especially inefficient technique for the urban fight.

In the MOUT fight, the tank is the most survivable platform capable of providing destructive fires with the necessary precision. Artillery provides unacceptable collateral damage, and, in practice, fires are likely to be heavily restricted. Army aviation is effective, but is extremely vulnerable to short-range fires, may have difficulty discriminating friend from foe, and has trouble engaging bottom floors against high-rise or dense concentrations of buildings. As a result, a lone pair of friendly tanks, adequately secured by dismounted infantry, can dominate the local area. Decentralization is key. To do so we have to integrate and synchronize tanks and infantry at the lowest possible level.



Courtesy photo

*Soldiers from the 1st Armored Division's 1st Battalion, 35th Armor Regiment patrol through Baghdad, Iraq, in an M1A1 Abrams tank.*

## COMMUNICATIONS

The better we communicate, the better our heavy and light forces fight together. One technique is a 'cheat card.' On one side of such a card should be a small map, with numbered buildings and code names for specific objectives, and tentative support by fire positions, targets, and target reference points (TRPs). On the reverse side should be a simple matrix, linking objective buildings with the assigned rifle platoon or company, their call sign, and radio frequency. Lastly, tanks and infantry should be marked in an easily seen way so heavy and light units know who is who.

Tanks should have frequencies, markings, and SBFs designated. Buildings should be marked in a way that helps tank-infantry cooperation. Some unit SOPs specify that each exterior window and room will be marked when cleared. While an excellent idea, in practice battlefield friction takes hold, and this SOP is not executed to standard very often. Marking the entry point, and every floor in multistory buildings is a realistic goal, and more likely to actually happen under stress and the fog of war. Each rifle company

should have a different color, so friendly tanks can tell by the color which company has secured which building and what frequencies can be used to make contact and aid in target acquisition.

Similarly, friendly tanks should be marked so a platoon leader can see a tank and identify who to talk to. In the dark, painted on bumper numbers are insufficient. Chemlights and range flags are good techniques. Each platoon should have a specific color; each tank, a different number of chemlights or flags.

### TANK-INFANTRY COOPERATION

In MOUT, unit integrity and cohesion can break down very quickly. Infantry platoons are wiped out; tanks are destroyed; objectives change. Units fight together that do not rehearse together. It is vital that communications be streamlined. If the chain of command make it easy for subordinate units to talk to each other, in the chaos of MOUT they will be more likely to coordinate and synchronize their efforts.

There are several common techniques that are counterproductive on the MOUT battlefield.

One of these “techniques” is the myth of the tank phone. M1-series tanks come without one, and their lack of a phone is seen by some as a liability. While a phone may be of some use in a rural field environment, in a town it is less so. In MOUT, a tank is normally found in one place — in the middle of a street. Smart infantrymen are not out in the open except when absolutely necessary. In the short ranges of MOUT, hiding behind a tank is easier said than done. Flanking fire and overhead fire make the cover of an engine deck smaller than you would think. RPG-7s, artillery, grenades and mortars cause fragmentation that can make the back of a tank a dangerous place to hide. Furthermore, a lone Soldier hiding behind a tank looks exactly like what he is — a leader directing the tank’s fire by talking on the phone. The defenders are extremely interested in such people, and will give their undivided attention in an attempt to cut off the firing commands you are trying to provide.

Similarly, the use of tanks as a shield against enemy direct fire is another technique that looks better on paper than in reality. It seems to be a product of units that train mainly against defenders with limited AT capability. First, it requires soldiers to bunch up outside of a building, which is usually a bad idea. Secondly, it requires the tank to advance up against the enemy building, and is more likely to expose its flank or top armor to an enemy AT team. The closer the tank gets to the building, the more likely that the tank will not provide the necessary cover, as the enemy can fire from above or from the flank. Conversely, the closer to the enemy buildings the less area that can be covered by the elevation and traverse of the tank cannon and coaxial machine gun. Lastly, it places the tank in front of the infantry, where the infantry is unable to provide security against enemy dismount teams. In short, the closer to the enemy, the less effective the technique. Now, at long range, or in certain urban areas where the buildings are predominantly single story, “tank shielding” has some effectiveness, and while it may work once or twice, in the long run it results in tank losses to enemy RPGs and satchel charges, and forces the infantry to fight alone when the tanks are left behind.

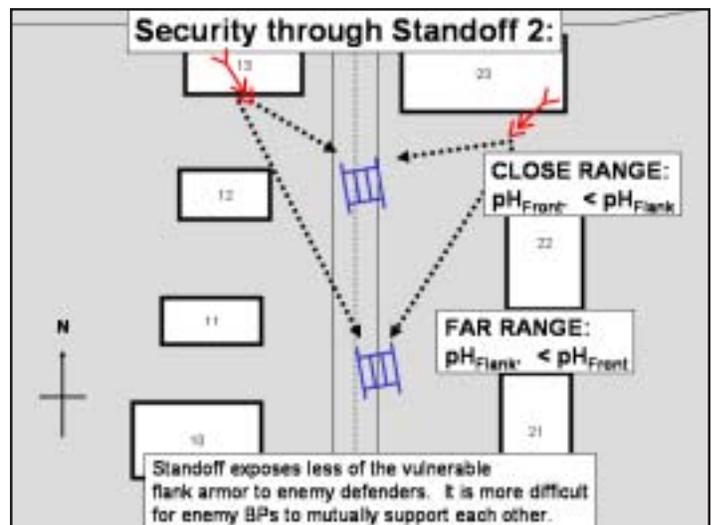


Figure 3

Casualties will be greater than if the tanks were able to fight through the depth of the objective. When in doubt, suppress the enemy from the rear rather than risk the tanks to ambush. Keeping the tanks in one place will allow them to maintain momentum throughout the attack. If you lose them all early in the fight, you will be forced to continue the attack without them, and ultimately lose most of your infantry later when they attack unsupported. (See Figure 3.)

One of the most important details in the tank-infantry cooperation is how infantry, when identifying enemy strong points, “pass off” target data to tanks. In World War II, when M4 Sherman tanks were equipped with phones, rifle platoons were equipped with a single SCR-536 “handie-talkie”, and company commanders had a single SCR-300 man pack to talk to battalion. Phones were vital because they were the only means of communication. Today, rifle platoons have a plethora of lighter weight SINCGARS radios and short-range radios for team leaders and squad leaders. It is vital that comms gear be compatible and communications checks among tank-infantry teams are part of unit precombat inspections (PCIs).

Target designation is an area where there is much room for improvement. Infantrymen fight while wearing PVS-7 and PVS-14 passive night vision goggles, which amplify available light to present a visible image. The most common way for infantrymen to designate targets to each other is to use the PEQ-2 or PAQ-4 laser. These lightweight devices are mounted on small arms such as M4s, M249s, and M240s, and present a laser beam visible to anyone equipped with passive NVGs. Tank gunners, on the other hand, use thermal sights, which detect heat emitted from the target, but cannot observe lasers. Tank commanders, whenever possible, should use NVGs to identify targets identified by lead infantry elements. It is difficult to do so while buttoned up; as tank commanders are a precious commodity, it may be necessary to fight from a commander defilade position with open protected hatch and keep the tanks as far to the rear while maintaining eyes on the target. Another option is to use “tracers on target” which will normally be picked up by thermals.

The most important technological advances for armor in MOUT

will be those that facilitate the ability of tanks to receive target data from nearby infantry. One possible initiative would be a passive low-light imager that could be mounted to the tank commander's station. A wide-angle capability is more important than magnification, as the primary purpose of such a device would be to allow tank crews to see targets identified using tactics, techniques and procedures (TTPs) currently in place among the infantry and aviation communities.

Coordination prior to an assault should include determining formations among infantry and armor, radio nets, fills, and frequencies, and how targets will be marked, by what leaders and with what means. We also should speak a common language in describing where the target is on the MOUT battlefield. One of the common TTPs seen at JRTC is for each building to receive a unique number, printed on small-scale maps. Walls are designated in a counterclockwise manner: Alpha is the north side, Bravo is west, Charlie is south, and Delta east of whatever building we are looking at. Openings such as windows and doors are marked from left to right and bottom to top. "Charlie 23" would be the second window from the left, third floor, on the south side of a building. Simple fire commands, to include how a target is marked, minimize time and confusion. For example:

- 1) *Alert* — (Tank) Red 13, this is (Infantry) Alpha 16, over.
- 2) *Direction* — Building 21, window Charlie 32, over. (White building at 11 o'clock, south side, second floor, third window from left)
- 3) *Description* — Enemy machine gun
- 4) *Range* — 100 meters.
- 5) *Method of fire* — Target marked with laser (lases)
- 6) *Command to fire* — Fire when ready.

Based on operations at the JRTC, there are several special situations where specific heavy-light TTPs have proved effective:

The first of these is the breaching of the enemy obstacles on the outskirts of the enemy town, and the assault to secure a foothold. During breaching operations, it is common to see a rifle company commander decide to fight with minimum attachments, and attempt a stealth breach in order to approach the objective unseen. A common task organization is with a rifle platoon, reinforced with an engineer squad, as a breach element; a follow-on assault platoon; and a third platoon (possibly reinforced with extra M240s) as an SBF element.

There are several trends that apply here. As the attacker approaches small arms range, large numbers of infantry are required to suppress the enemy on the outskirts of town. As the defenders are hidden inside and the attackers are not, a 3:1 attacker to defender ratio is usually required to achieve fire superiority. By massing rifle squads and machine crews to mass fire effects, a lucrative target is presented for enemy mortar crews, who routinely lay their 82mm mortars on the last covered and concealed positions outside of towns. The result is a mass-casualty situation as the enemy fires their final protective fires on this large, stationary target.

This situation is an ideal opportunity for armor. Long-range fields of fire that reach the outlying buildings offer armor the opportunity to apply overwhelming fires without the threat of an

RPG ambush. Armor can do what infantry cannot: withstand the effects of enemy mortars while maintaining fire superiority, allowing the breach elements to maneuver and secure a foothold in the town. Infantry scout ahead to the first position that offers suitable fields of fire, which are then occupied by armor. Tanks consolidate once the foothold is secured and can then be task organized with the assault platoons.

A second situation that arises concerns occupation of support by fire positions in the town. Light-skinned vehicles that cannot stand toe-to-toe with enemy AT teams practice a form of berm-drill to survive. Rather than drive up or down from a dug-in-firing position, they position themselves in hide positions behind buildings and drive around cover. This technique is similar to an infantryman 'pieing' around a corner. Vehicles should advance only far enough to engage their target, minimize how much of the vehicle is exposed, minimize time spent in firing position, and present the thicker frontal armor toward the enemy. Dismounted infantry forward of the fighting position should give detailed firing commands so the crews will spend minimum time exposed before engaging. If the enemy AT threat is heavy, tank commanders and gunners should dismount to see the enemy positions from hidden vantage points.

Even main battle tanks can benefit from this technique. In small villages and towns a tank that suffers a mobility kill can still overwatch much of the objective. In larger towns and cities an immobilized tank will be unable to support the attack; defenders can then withdraw and defeat attacking infantry from support positions several blocks to the rear. A mobility kill will take a tank out of the fight as surely as a catastrophic hit.

For the leader developing a class on tank-infantry cooperation, available resources are few and far between. One of the best portrayals of armor in MOUT, interestingly enough, is the film *Saving Private Ryan*. In the closing sequence, a German infantry company, reinforced with several heavy tanks, is delayed and attrited by a heavily outnumbered and ad-hoc U.S. force of less than one platoon. Because of this well-executed delay, exacerbated by the Germans violating many of the principles of tank-infantry cooperation in MOUT, the Germans suffer ultimate defeat by a joint and combined arms task force. As a result, the film depicts good examples of what not to do in the attack.

Combat in urban terrain will be likely in any possible deployment. Light infantry and armor, fighting together, is a combination that has historically proved very effective. We must effectively utilize these organizationally and culturally different close-combat formations and win require communication, synchronization, and effective SOPs that maximize the capabilities and minimize the limitations of both types of units. This is "graduate-level" combined arms warfare and it does not happen easily. But the rewards are undeniable. The beginning steps to achieving this extraordinary capability start at home station with effective training.

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