

ARMOR

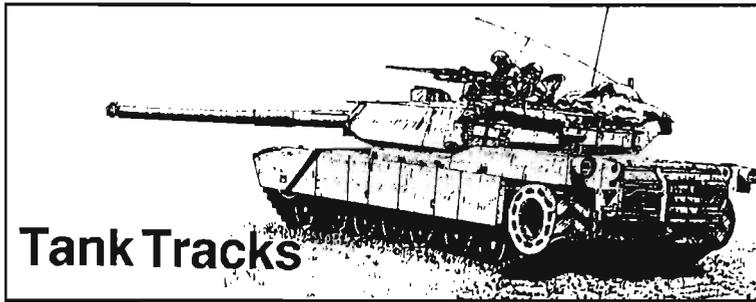
Six Imperatives
For The Armor Force
by GEN CARL E. VUONO - See Page 12



50th Anniversary U.S. Armored Force



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We tend to love heroes. Tina Turner even puts to song her need for one. And it doesn't matter if reality fails to provide a bountiful crop from which to choose, because we'll make them up in a heartbeat. We'll even impart mystical super powers to their personas to help them overcome the forces of evil, while they provide examples of the right thing to do through their efforts to triumph in the end. And triumph they do, because their morality requires it.

As General Patton said, "Americans love a winner and will not tolerate a loser." The truth of that statement runs so deep that we are willing to avert our eyes to moral lapses, and in some cases, like Bonnie and Clyde, Butch Cassidy, and Jesse James, we are willing to go the opposite direction and ignore total moral bankruptcy to portray them as heroes who have merely taken on the system and lost.

World War II furnished us a spate of heroes the likes of Audie Murphy, Pappy Boyington, and Leon Johnson. Their individual heroism has been well documented. But we do not have to look far to find our own breed of heroes, though most of them remain unadorned by history's effort to make famous their individual faces and deeds. They were the soldiers of the 1st and 2nd Armored Divisions — they possessed no super powers,

nor were they gifted with moral superiority above that of the common man.

When they entered combat in North Africa, they were members of a new organization, the combined arms armored division, at that moment, untried in battle. Their organizations, tactics, and equipment — much of it not as good as the Germans' — had only been tested on the ground of Tennessee and the Carolinas. This was on-the-job-training at its utmost. They paid dearly in lives for the lessons learned that would result in new organizations, tactics, and equipment employed by subsequent armored divisions. Through perseverance in the face of harsh odds, blood, sweat, and not a few tears, they overcame initial adversity and triumphed in the end.



One of their leaders, a hero's hero, General I.D. White has stood the last roll call almost exactly 50 years after he helped form the 2d AD (see p. 50).

We don't have to invent our heroes and imbue them with special powers. We need only look to historical records to find flesh and blood heroes like I. D. White and the soldiers of "Old Ironsides" and "Hell on Wheels."

Dick Tracy was a neat guy. But could he tank with the best of them?

— PJC

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LETTERS

Scouts Need Stingers Only for Self-defense

Dear Sir:

There are some soldiers in the field who have misconceived ideas surrounding the ability of the battalion scout to positively identify, acquire, and engage hostile aircraft with the non-dedicated Stinger. I read in anguish the letter in the January-February 1990 issue of *ARMOR* titled, "Non-dedicated Stinger Gunners Wouldn't Be As Effective, Air Defense Chief Argues."

Let us set the record straight! The art of stealth reconnaissance implies the

deliberate actions of the scout to prevent his opponent from finding him. The business of reconnaissance and information-gathering mandates that battalion scouts maximize their ability to remain undetected while executing the mission. In view of this fact, battalion scouts employ Man-Portable Air Defense Systems (MANPADS) only in their own self-defense against a hostile attacking air threat. The intent is not to improve the air defense of the maneuver forces, which the letter suggests.

Certainly, it is not in the best interest of the commander to have his forward reconnaissance elements actively seeking hos-

tile aircraft. Nor is it his intent to deliberately integrate the Stinger missiles carried by the scouts into his active air defense plan. The dedicated ADA-supporting unit is the focal point of that plan. Non-dedicated MANPADS do not replace existing ADA MANPADS. On the contrary, they are an addition to the dedicated ADA support. Employing Stinger as an "after-effect of deploying the scout" is not even an issue here. Indeed, scouts with Stingers often provide the only air defense available to the reconnaissance force.

Let us now focus on the level of proficiency the battalion scout must maintain to employ Stinger effectively and safe-

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ly to avoid incidents of "fratricide." Studies culminating from the summer '89, 24th ID Scout Platoon Concept and Evaluation Plan (CEP), conducted at Fort Stewart and the NTC, reinforce this cavalry officer's conviction that outfitting the battalion scout platoon with Stingers is movement in the right direction. In addition to soldier comments, these studies concluded that with four Stingers, the scout platoon had an effective and readily-available "revenge weapon." The 19D scout operation of the non-dedicated MANPADS received intensive certification training from ADA personnel. On the average, certification was achieved within three or four hours. As a matter of record, the 19Ds were extremely proficient in their use of the Stingers. One platoon was credited with three HIND-D kills during the conduct of its mission.

There is little weight to support the belief that Mujahideen Stinger operators in Afghanistan were of greater intellectual quality than the U.S. Army battalion scout. In Afghanistan, intelligence was not a qualifying virtue, especially when the Mujahideen had no aviation assets, and every aircraft in the sky was assumed to be hostile.

Without question, the battalion scout is still the finest around!

Forge the Thunderbolt!

J.W. THURMAN
COL, Cavalry
Ft. Knox, Ky.

Panama — Beware False Lessons Learned

Dear Sir:

I have just read the article, "Sheridans in Panama," in the March-April 1990 issue of ARMOR and feel I must comment on it.

While the effectiveness and accomplishments of the Sheridans and the LAVs and their crews cannot be disputed, we must be cautious about the conclusions we draw from their use in Panama.

It must be remembered that the U.S. forces engaged in Panama did not face a staunch, organized enemy. The Sheridans and LAVs did not face any enemy armored vehicles. With the exception of the occasional wild RPG shot, there was no enemy antiarmor defense. There was no evidence of enemy air attack. These facts must be kept in mind if we are to keep

operations in Panama in proper perspective, to preclude erroneous decisions resulting from false "lessons learned." Our next adversary may decide to fight hard with all the weapons he has. The Panamanians did not do either.

W.D. BUSHNELL
LTC, U.S. Marine Corps
Ft. Knox, Ky.

Suggests Staggered, Active/Passive OPs

Dear Sir:

I read with great interest Captain Walter F. Ulmer III's article titled "Tandem Ops: An Approach to Mounted Surveillance," in the January-February 1990 issue of ARMOR. As a company grade officer in a tank battalion, I feel Captain Ulmer has presented a unique approach to employing OPs in a training environment; however, I have to question its applicability in a high-stress combat environment.

I have had the opportunity to visit the NTC as a tank platoon leader and have had several NTC analogs at the Yakima Firing Center. The experiences gained during my rotation and my own experiences as a platoon leader lead me to believe that the use of tandem OPs in training fosters a reliance and a dependency on a technique that is only applicable prior to the first battle. Armored OPs play a vital role in all combat operations, from occupying an assembly area to defending a battle position, and the employment of these OPs is critical to success. The use of tandem OPs is a luxury that will, unfortunately, not exist during a high-intensity conflict. The high-stress environment of the NTC simulates the effects of sustained combat operations and brings to light how quickly a unit can be degraded by casualties and maintenance problems. These effects will quickly force you out of the tandem OP technique in order to provide yourself the security needed to survive and fight another day. Also, terrain and the enemy situation will effect your OP posture, and again may result in foregoing the tandem technique. Why train your crews in a technique that probably will not be used? I feel it is better to train the crews for the worst-case scenario of operating as independent OPs instead of training them to rely on their wingman to share the responsibility.

Additionally, the idea of seven tanks in a company at zero percent alert bothers me. In a platoon battle position with 125-150 meters between tanks, having only

two tanks alert seriously hinders your ability to cover your sector. Also, by doubling up, you increase the distance between OP pairs and open yourself up to enemy infiltration. Of course, you can supplement with dismounted patrols, but the enemy has fewer eyes and ears to worry about. In combat, is that a gamble you would be willing to take? Also, by pairing up, you increase your chances of detection by photographic and infrared satellite capabilities.

As a platoon leader, I have tried many OP plans. After much trial and error, I adopted a plan devised by my tank commanders at the NTC. We staggered the platoon, two tanks forward (active OP) and two tanks behind (passive OP). The two passive OPs were offset 50-100 meters to create a lazy W. The active OPs were at 50 percent, with the TC in the hatch and the TTS on and scanning. The two passive OPs were at 25-50 percent, depending on crew size. The TC in the hatch was listening and watching with PVS-5s (if available). The two passive tanks kept the TTS off. We found that by rotating every two hours we helped reduce the TTS "glaze" that resulted after long periods of scanning. This combination maximized the platoon's eyes and ears and reduced wear on the TTS. The two passive OPs provided the ears that the TTS in the active OP usually degraded. Each tank was part of the OP plan, and was alert. Yes, it was demanding; however, in the words of Sir A.P. Wavell, "Remember that war is always a far worse muddle than anything you can produce in peace." Also, this method was safe and provided excellent security. Tough, realistic training instills discipline, and if you train to tough standards in peace, your soldiers will respond in war.

JOSEPH C. SHANNON
1LT, Armor
D Co., 1-33 Armor
Ft. Lewis, Wa.

Correcting the Record

Dear Sir:

Sgt. Leo J. Daugherty III did a fine job with his review of High Treason: Essays on the History of the Red Army (March-April 1990). He is incorrect, however, in including the combined American, British, and French expeditionary force in North Russia with interventionist forces defeated by Trotsky's armies. Beginning with a fight at the village of Toulgas, Archangel Province on November 11, 1918, and con-

Continued on Page 49

COMMANDER'S HATCH

MG Thomas C. Foley

Commanding General

U.S. Army Armor Center



Meeting Armor's Challenges: The Cavalry

Here at the Home of Armor and Cavalry, we are closely examining the expected battlefields of the 1996-2004 period. The first product of this examination is our White Paper on the future of the Total Armor Force, which was distributed during the very successful 1990 Armor Conference. Thanks in great part to the outstanding feedback and comments of over 200 leaders representing many branches, we are well on our way to refining a concise vision and action plan for the future of Armor as a key member of the combined arms team. Over the next several issues, I will lay out in this column the critical components of this road map for meeting Armor's challenges in the 1990s and the next century.

I'll begin with the component of our Army that most often enters combat first — the cavalry. The White Paper points to a continued and expanded need for the cavalry and scouts in our warfighting organizations, from corps to battalion level. The future battlefield will challenge us to perform reconnaissance and security operations over ex-

tended distances. The lethality of weapons, coupled with improvements in target acquisition systems, will mean that dispersion will be a necessary condition. Some now refer to this as the non-linear battlefield.

Cavalry units must be able to operate over increased distances, and use the information provided by target acquisition systems to win the counterreconnaissance battle and then to find the enemy's main forces, his command and control nodes, and his lines of communication. These vulnerable areas then become the prime targets for our maneuver forces to attack. Our examination confirms the soundness of our current doctrine — AirLand Battle. Every corps requires a cavalry regiment to strip away enemy reconnaissance elements, maintain contact with his main body, and ideally, influence his speed and direction of movement to put him in the time and place for our maneuver forces to be most effective.

The cavalry regiment must also be prepared to screen the flanks of the

corps main body, and press on to begin the cycle again with the enemy follow-on units, while providing security and early warning.

These requirements call for a flexible, responsive, and lethal regiment that combines tanks (main battle tanks or light armor), cavalry fighting vehicles, stealthy reconnaissance vehicles, and dual-purpose aircraft into a powerful, versatile combined arms formation. We have designed an armored cavalry regiment incorporating these features as we continue to develop the doctrinal concept. The regiment retains the capability to attack or defend in an economy-of-force role for the commander of a forward-deployed corps, or a reinforcing corps. In the case of our contingency corps, the regiment retains the same essential roles and missions, but is lighter.

The divisional cavalry squadron has been the subject of much criticism during the past several years. This is especially true of the squadron in our armored and mechanized divisions. Its lack of

tanks, and the absence of a true reconnaissance vehicle, have been the major concerns, along with the overall insufficiency of ground reconnaissance assets. The new organization we have designed corrects these problems. Our analysis shows that the division commander requires a cavalry organization to accomplish the same functions that the division cavalry regiment performs for the corps commander. Prototype units containing tanks will be formed and evaluated this summer in U.S. Army Europe. We also have work to do in improving the cavalry squadrons of the light infantry, airborne, and air assault divisions.

Our studies also show that the brigade commander requires a reconnaissance unit to be his "eyes and ears." Unlike the corps commander or division commander, he does not need a unit designed to fight for information. We believe his requirement can be best satisfied by a platoon identical to the battalion scout platoon of ten HMMWVs and four military motorcycles. Key equipment of the platoon includes a

variety of sensor and optical capabilities, which allows these scouts to perform their reconnaissance missions without being targeted themselves. These capabilities clearly provide the brigade commander with a more complete picture of the battle and the battlefield than he previously had. Such a unit was formed on an experimental basis and performed with outstanding results during REFORGER 90.

Finally, battalion level. Our studies confirm the validity of our doctrine for a platoon-size organization designed to acquire information by stealth. The recent decision to move to a battalion scout platoon based on the HMMWV stems from this analysis and from tests conducted in 1989. Those tests clearly showed the superiority of a platoon organized with HMMWVs and motorcycles under a wide variety of battlefield conditions. We have continued this design in the ongoing conceptual work and continue to see the benefits of this decision. Effective reconnaissance provides a large payoff for the battalion commander as he works to position his forces

and synchronize the combat power at his disposal. These scout platoons survive better, despite their lack of armor protection. Not only is their survivability enhanced, but they are able to move farther to the front and flanks of the unit to provide additional time for the battalion commander to maneuver against enemy forces.

Our emerging conclusion is that the nature of the future battlefield means that cavalry/scout capabilities will be needed more than on any previous fighting ground – at battalion, brigade, division, and corps levels. The challenge continues. We must work to develop the equipment these cavalrymen will need, along with the tactics, techniques, and procedures that will derive the maximum effectiveness from these men and their equipment. Additionally, we're challenged to devise training and leader development programs that will infuse this force with the boldness, the audacity, and the decisiveness that have historically characterized cavalry units and cavalrymen.

Forge the Thunderbolt!

Armor Force Reduction Update

Since the Chief of Armor's announcement of major reductions in the size of the Armor Force in the March-April issue, further cuts in the proposed size of the Army have been announced. These reductions will lead to an even smaller Armor Force over the next five years. This table summarizes the current and proposed force. The totals do not include current Armor Center initiatives to establish Light Armor Cavalry Regiments and to increase the number of Light Armor Battalions in the force. All strengths are subject to congressional change and approval.

| | <u>Current</u> | <u>Proposed</u> |
|---------------------------|----------------|-----------------|
| Army Personnel | 1,540,000 | 1,225,000 |
| Active | 764,000 | 580,000 |
| National Guard/Reserve | 776,000 | 645,000 |
| Armor Personnel | 57,143 | 40,867 |
| Active | 32,707 | 20,300 |
| National Guard/Reserve | 24,436 | 20,567 |
| Active Army | | |
| Tank Battalions | 53 | 34 |
| Cavalry Squadrons | 20 | 17 |
| Recon Squadrons | 5 | 4 |
| Light Armor Battalions | 1 | 1 |
| TDA Battalions/Squadrons | 9 | 9 |
| Reserve Components | | |
| Tank Battalions | 51 | 42 |
| Cavalry Squadrons | 16 | 11 |
| Recon Squadrons | 1 | 0 |

DRIVER'S SEAT

CSM John M. Stephens
Command Sergeant Major
U.S. Army Armor Center



Teamwork at Its Best

Over the past several years, I have had the opportunity to address many subjects. In most cases, basic fundamentals and teamwork have been part of the writings. I firmly believe that it is the combination of those two that gets you to the level of discipline, esprit de corps, morale, and proficiency that qualifies an organization as combat effective!

Most of my columns have been aimed at the squad and the platoon, again, focusing on the kind of teamwork that separates mediocre from outstanding squads, crews, or platoons.

The teamwork I would like to address in this, my last article, is a recent, coordinated effort within the Total Army (Active and Reserve Component) that gave a lot of soldiers the opportunity to be trained on the M1-series system before assignment to another organization.

The stand-down of 1-33d Armor at Ft. Lewis, Washington, presented

a unique problem because there were no M60 organizations to assign the soldier to at Ft. Lewis, nor were there M1 tanks on which to train them at Ft. Lewis: as with everything else nowadays, money is a major obstacle.

When planning any kind of activity that requires M1/M1A1 tanks, moving the personnel to a field training site greatly reduced the overall cost. Sending soldiers to Gowen Field, Idaho, a National Guard training site, added a new dimension to our capability.

First, it demonstrated that we can lean on the Reserve Components and receive quality training when needed. Second, the Army's training requirements for the AGR NCOs - to be fully MOS qualified, active component BNCOC, Master Gunner Course, and active component ANCOG - gives the commander the quality noncommissioned officers to teach any group of soldiers, enlisted or officer, to a high degree of proficiency in minimal time. Last, it

demonstrated to the Reserve Component the quality of soldiers that we have in our Army: quality not only in learning and retaining, but quality in discipline also. Immediate reaction to orders caused the training and tank transition to go much smoother.

At a time in our Army when the elements of the Total Army will become more dependent on each other, this was a great way to start. It demonstrated teamwork at its best, from the top to the bottom in the Total Force.

This is my last article for *ARMOR* as the Ft. Knox and the Armor School command sergeant major, and as a soldier. I appreciate all of the support I have received from the commanders, officers, and non-commissioned officers for the last seven years. I hope I have been able to assist your organization and soldiers in some small way.

Forge the Thunderbolt!



The Combat Reconnaissance Detachment In the Meeting Engagement and Defense

Or, how to beat them at their own game

by Major Bryan L. Oliver

Acknowledgments

The concept of a semi-independent advance guard organization within an armor/mechanized task force is not an original one with this writer. BG Wesley Clark, commander, NTC Ft. Irwin, and former brigade commander, addressed the need for an organization and tactics to counter the Soviet meeting engagement doctrine in 1987, after exercising his rotational brigade in meeting engagements at the NTC. LTC J. Richard Wallace, commanding a balanced battalion task force, actually employed a similar formation in meeting engagements at the NTC in 1988. The ideas of these two officers, and the efforts and lessons-learned of real soldiers

under them, have formed the basis of this article.

The Problem

The Soviets believe the meeting engagement will be the typical battle of the next war. Their doctrine and training focuses on removing or minimizing all of the unknowns prevalent in a meeting engagement. On the other hand, U.S. Army doctrine for the battalion task force in this situation appears to operate in a vacuum. It does not consider, nor capitalize, on the predictability of Soviet doctrine for the meeting engagement. FM 71-2 focuses on a meeting engagement with a single enemy entity, whereas Soviets will

move to contact in separate echelons, a technique geared toward defeating an opposing task force focused on one enemy entity! Our doctrine directs that the battalion task force designate a forward company/team as its advance guard, providing security, and enabling the task force main body freedom to maneuver uncommitted. Curiously enough, it also directs that the task force will support the advance guard by following within two kilometers.¹ That short interval commits the main body to an axis of advance following its advance guard company/team and will, within four minutes, bring it under fire of the same enemy (most likely the Soviet Forward Security Element or FSE)

engaging the advance guard. The close proximity of the task force main body to its own advance guard makes the job of reconnaissance for the Soviet Combat Reconnaissance Patrol (CRP) and FSE so much easier. It puts the entire task force within one sweep of the binoculars. The Soviet advance guard battalion commander, yet uncommitted with his main body, merely designates the appropriate battle drill, a direction of attack, and the battalion objective — an enemy task force attempting to extricate itself from a fixing battle with the Soviets' own FSE.

Just as significant, the vagueness inherent in our doctrine requires commanders to train for and consider a host of different contingencies, when they need focus on only a few, based on Soviet doctrine. Worse, they might focus on the wrong situation. That vagueness requires commanders to consider and train for any number of events which SOPs and battle drills can't adequately cover. Decision-making takes longer. Execution takes longer. "The friction of war" infects decision-making and execution as tired, confused leaders labor with a myriad of courses of action to cover every contingency; subunits interpret and react to FRAGOs for which they did not anticipate or rehearse. So much for getting inside the other guy's decision cycle.

A contrived scenario? No. Too many readers have seen this actually happen, or variations of it, at the National Training Center at Ft. Irwin. The Blue Force meets defeat in the meeting engagement for a number of reasons; piecemeal deployment of combat power, first-battle jitters, poor intelligence preparation of the battlefield, etc. But there exists a more fundamental weakness; we execute tactics based

on doctrine of FM 71-2 without sufficient consideration of Soviet doctrine. Page-to-page comparison of FM 200-2-1, *Soviet Army Operations and Tactics*, and our own FM 71-2 illustrates the disparity.

Soviet View of Meeting Engagements

According to FM 200-2-1, Soviets characterize the meeting engagement by:

- Intense combat with considerable room to maneuver.
- Extremely limited planning time; heavy reliance on battle drills.
- Continuous effort to seize and maintain the initiative.
- Deployment into combat from the march at high speed.
- Uncertainty due to lack of detailed intelligence.
- Sudden changes in the situation.
- Open flanks on each side.

They will minimize the meeting engagement as purely a chance occurrence by anticipating it and planning for it. Soviet commanders will make extensive use of continuous reconnaissance. They will organize their forces to ease reconnaissance, extend their decision-making time and allow for speedy deployment.²

One could liken the Soviet's use of the FSE to a boxer's left jab. The boxer jabs with his left, pushing, frustrating his opponent, sensing the distance to his jaw, fixing his exact location, all the while planning for the instant to release a decisive roundhouse right fist against the side of his opponents face.

Unfortunately, our accepted tactic of maintaining all of our task force elements, advance guard and all, within direct fire support of each other, amounts to tying our own left hand behind our back and smacking

our opponent's left jab with our face!

The Solution

This situation is not all gloom and doom. Soviet doctrine makes their forces extremely predictable. Regimental and battalion-level battle drills require extensive coordination with supporting arms. Command groups, especially at battalion level, are not effectively staffed to provide either coordination or flexible responses to unexpected situations.³

We can still beat these guys simply by turning their predictability against them, task-organizing for combat to frustrate their organization and intentions, and gearing our tactics to counteract their speed and inflexibility. Task organization requires no changes to our existing TOE. Our tactical doctrine is basically sound. But, to be effective, it must attend to the opposing doctrine.

Introducing the Combat Reconnaissance Detachment

We can task organize to create our own "left jab" and still maintain enough combat power in our task force main body to outgun the enemy battalion main body. The following task organization depicts this new force:

Combat Reconnaissance Detachment

- Provisional Tank Platoon (consisting of 6 tanks)
- M901 TOW (ITV) Platoon
- Mortar Section (3 Tubes)
- Engineer Platoon (Mobile Obstacle Detachment)

Each tank company will detach one headquarters tank. These four

tanks will task organize with the two battalion headquarters tanks and, under command of the battalion's master gunner, will form the provisional tank platoon. Tanks will comprise the principal combat element of the detachment. Overwatch and long-range fires will be provided by one ITV platoon normally cross-attached from the sister mechanized battalion. If the task force scouts are equipped with HMMWVs from within the battalion, their ITVs may join this element, further increasing its firepower. A split section of mortars (three tubes) with fire direction center (FDC) from the armor battalion's organic mortar platoon will provide immediate indirect fire suppression and smoke by direct lay. An engineer platoon(-) (OPCON) will provide support in mobility, countermobility, and engineer reconnaissance. One squad from that engineer platoon will support the scout platoon with engineer reconnaissance.

The armor battalion's headquarters company commander, normally the most experienced combat arms company-grade officer, will command and control the detachment. Because the CRD's initial contact will be critical to the continued success of the mission, the task force S3 should position himself to provide overall direction to the CRD, report its situation, and recommend courses of action to the task force commander based on its progress. He is the second most experienced combat arms officer in the field.

Coupled with the experience of the CRD's commander (if properly selected), engineer platoon leader, ITV platoon leader, and battalion master gunner, a preponderance of leadership now lies forward in the task force, where it can best in-

fluence a most critical stage of the meeting engagement.

CRD Effectiveness Against Soviet Doctrine

Aptly named, this unit will fight as an advance guard, detached from its parent armor task force, up to seven kilometers forward and away from immediate direct fire support. Current doctrine designates a company/team as the advance guard, depriving the commander of 25 percent of his combat power for maneuver against the Soviet advance guard battalion. The CRD provides a separate, detached combat force to deal with the CRP and FSE, leaving the armor task force largely intact. The commander still has four complete company/teams with which to maneuver against the Soviet advance guard battalion.

The mission of the CRD is uncannily similar to that of the FSE. The scout platoon will vector the CRD toward the Soviet platoon-sized CRP. The CRD will attempt to ambush and destroy the Soviet CRP quickly, or fix him with direct and indirect fires. Whatever the outcome, the CRD will not embroil itself in that fight, because its primary mission is to find and ambush the Soviet FSE. Once the scouts acquire the FSE, they will now vector the CRD toward an engagement area where it can expect to engage and fix the Soviet element. The CRD intends to destroy the FSE, or neutralize it so that, on order, it might position itself to block a likely avenue of approach of the Soviet advance guard battalion.

In a movement to contact, the CRD will march at least seven kilometers behind the leading scout platoon screen, and approximately six kilometers forward of the armor task force. Assuming the scouts can

see forward three kilometers, that interval gives the CRD commander ten kilometers of maneuver space, but only ten minutes or so to deploy against the Soviet CRP. Remember, the two forces are closing on each other at a combined 60 kilometers per hour. Assuming the CRP can be engaged and destroyed within five minutes — not unrealistic, considering the CRD will ambush it with a two-to-one advantage — the CRD still has another 10 to 15 minutes, based on Soviet march rates, to get set against the oncoming FSE.⁴ If time runs short, the CRD commander uses his option to drop a small sub-element from his detachment to fix the CRP, taking it out of the play and away from a position to observe and report to the Soviet battalion commander. He still maintains a favorable ratio of forces with which to ambush the FSE. Timely and accurate reports by the scouts are critical to enable the CRD commander to anticipate engagement areas around which he can establish an ambush. In addition to firepower, his advantage lies in ability to get set first and ambush the Soviet units, rather than collide with them and likely suffer one-for-one casualties.

The detachment can sustain itself in all classes of supply through various options. Preferably, it may receive logistical support through the mortar platoon's resources, under supervision of the mortar platoon sergeant, or a designated "field first sergeant" from headquarters company assets. The unique logistical requirements of its diverse weapons systems makes this option most attractive, especially if the CRD will permanently task-organize under HHC control. Another option would consist of habitually assigning logistical responsibility to a line company/team. Under this option, the detachment

would co-locate for replenishment with the nearest habitually assigned company team.

Picture, if you will, this CRD's impact from the perspective of a Soviet advance guard battalion commander moving to contact. His CRP platoon leader reported that he has engaged a combined arms element of approximately company size (much bigger than a platoon), but sees no sign of a larger body. Where is it? The Soviet commander has two options at this point. He can deploy his FSE to an an-

ticipated flank of that last contact, hoping the remainder of the American task force will appear, or he can maintain the FSE's original route of march.

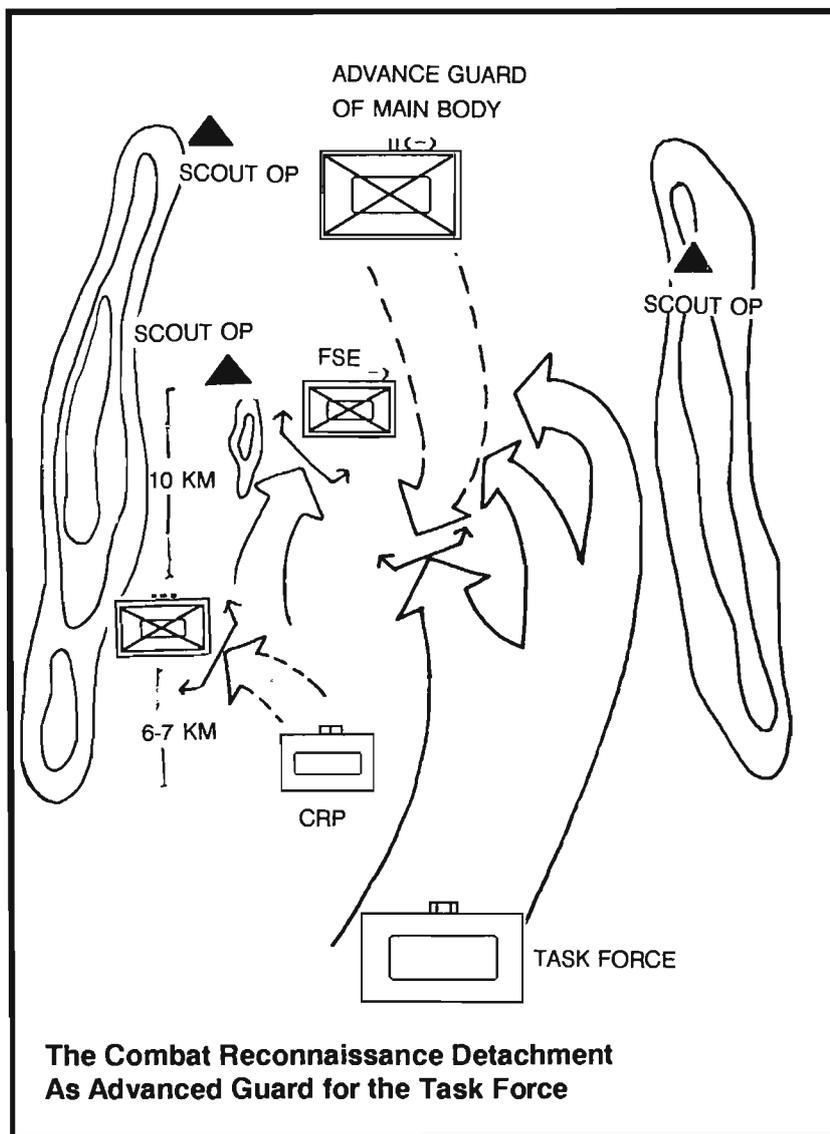
Either way, the FSE will make contact with, and be fixed by, the CRD. He cannot fix a location of the task force because it remains over three kilometers beyond the contact, out of visual observation, but moving, awaiting the scouts' first spot reports of the Soviet advance guard battalion. As the Soviet FSE and the CRD make contact and transmit

initial contact reports, the Soviet battalion commander still lacks hard intelligence on the location of the task force. Once again, he has two options: march to the sound of the guns, hoping the task force will appear in the vicinity of the contact; or bypass the fight, and kick out another FSE and CRP to continue the search.

With his FSE in contact he has only two-thirds of his combat power remaining with which to maneuver. He intends that speed will offset his lack of numbers. Meanwhile, the American task force is still intact. If the scouts are successful, they will have detected the movement and direction of the Soviet advance guard battalion. The task force commander now has the information he needs to select an engagement area, deploy his company/teams, and engage the Soviet battalion on his own terms.

When his CRD made contact with the Soviet FSE, his task force and the Soviet battalion would be closing from, by doctrine, eight to ten kilometers. Enough time? Probably, considering that the task force easily outguns the Soviet battalion, it maintains a reconnaissance advantage over a relatively "blind" Soviet battalion, and it still has room to maneuver.

With this task organization, you have given the task force commander a means to accomplish his mission without drastic or fanciful changes to TOE, or doctrine. He will win because his tactics and task organization are designed to disrupt the Soviet battalion commander's reconnaissance, prevent premature decisive engagements, and increase his own freedom of maneuver and reaction time. With these advantages, the task force commander can seize the initiative.



Counterarguments

What aspects of the organization and tactics of employment of the combat reconnaissance detachment, might possibly contradict doctrine? It departs from FM 71-2 in two areas. The CRD, as advance guard for the battalion task force, marches seven kilometers forward of the task force main body, rather than the one-to-two kilometers stated in FM 71-2. The increased interval protects the main body from being engaged simultaneously with its own advance guard.

Secondly, effective execution requires some increased interval between scouts and the advance guard, ideally one-half hour or more. Real world considerations of passing through an allied unit restrict early crossing of the LD/LC. It follows that the acceptable interval from scouts to advance guard could be gained only by delaying the CRD's crossing of the LD. Similarly, the task force main body would delay crossing the LD for at least 15 minutes after its CRD. The total time required by a lead task force of a brigade combat team to complete passage of lines and cross the LD will approach 60 minutes, a long time, but necessary in order to build the interval needed that provides adequate security to the task force and ultimately, the brigade.

Summarizing the Advantages

The CRD provides the following advantages:

- Allows more efficient use of combat power, creates economy of force, gives four maneuver teams back to the task force.
- Places a preponderance of experienced leadership forward at a critical location on the battlefield.

- Gives the task force commander a standoff capability, allowing him to maneuver unobserved with greater combat power against the Soviet main body.

- Headquarters tanks are now better used as fighting vehicles rather than command and control vehicles.

- Gives added depth to the task force defense in sector.

- Forces early deployment and disrupts synchronization of Soviet attack.

- Can organize without changing current TO&Es.

Conclusion

Soviet doctrine demonstrates that they have made the meeting engagement a critical scenario, one they plan on winning. By their use of battle drills, the Soviets have made the meeting engagement an exercise in reflexes. Those of us who have experienced that doctrine, as practiced by the OPFOR at the NTC, can attest to its effectiveness.

Unfortunately, our own present doctrine fails to attend to the meeting engagement with the same depth of analysis. It fails to account for the left jab and roundhouse right punch in the Soviet combat formations.

Employment of a CRD will counter his left jab by neutralizing his reconnaissance, and destroying the formation with which he intends to fix our task force. The CRD will accomplish its mission sufficiently forward to allow the task force main body freedom to maneuver, unobserved and intact, against the Soviet advance guard battalion. The CRD gives added depth to the task

force's defense mission. All of this can happen without changing TO&E, or adding extra personnel. The means already exists within our organizations. All that remains is to make it happen.

Notes

¹Field Manual FM 17-2. The Tank and Mechanized Infantry Battalion Task Force, September 1988, pp. 3-44 - 3-46.

²Field Manual FM 200-2-1. The Soviet Army, Operations and Tactics, 16 July 1984, p. 5-30.

³C.J. Dick. "Soviet Battle Drills, Vulnerability or Strength?," International Defense Review, No. 5, 1985, pp. 663-664.

⁴Timings for friendly forces are based upon a 12-15-mph march speed, at which it would take just over 2.2 minutes to traverse one kilometer. Soviet forces move at a doctrinal rate of march of 30 kilometers per hour. At that pace, they would traverse one kilometer in exactly two minutes.

Major Bryan L. Oliver graduated from West Point in 1974. He led tank and scout platoons at Fort Hood, Texas, and Germany, and commanded a tank company. He taught tank and cavalry platoon tactics at the Armor School at Ft. Knox and commanded an OSUT Cavalry troop. Major Oliver acted as operations officer for the commandant at West Point. He graduated from CGSC, Ft. Leavenworth, and has recently completed a two-year assignment as a tank battalion S3 at Ft. Carson. He is presently assigned as Armor Branch Assistance Team Chief, Readiness Group, Ft. McCoy, Wisconsin.

Six Imperatives for the Armor Force

by General Carl E. Vuono



Introduction

As we celebrate the 50th Anniversary of the combat arm of decision, we can look back over the past half century with great pride at the contribution that the Armor Force has made to the defense of peace and freedom. Your unrelenting readiness to defend freedom has not been in vain.

Simply put — we are winning, and the triumph of democratic ideals that we are witnessing in Europe is due in no small part to the selfless service of millions of American soldiers — soldiers who, supported by the other services, stood shoulder-to-shoulder with our Allies, forming a bulwark against communist aggression and providing a beacon of hope for those oppressed. For it was the American soldier who bought time for the inherent weaknesses of communism and the gathering momentum of democracy to bring the Soviet satellite regimes to their knees.

While we rejoice in the awakening of democracy in Eastern Europe, we must recognize that the struggle is not over. Although the national euphoria over the events of the past year has led some to argue that we can decimate the military posture that has been the foundation of our success so that we can start spending the "peace dividend" that we hear so much about, those of us charged with the responsibility for our nation's security cannot forget

the haunting words of Neville Chamberlain when he announced in 1938 that the world had achieved "peace in our time." Less than a year later, that same world would be engulfed in the mightiest war in human history — a global conflict that would consume whole nations and leave 50 million dead.

Nor can we forget the rush to demobilization after World War II that left us with a poorly trained, ill-equipped, and ill-prepared Army — an Army that could not stem the tide of North Korean aggression until thousands of Americans had shed their blood. These soldiers paid with their lives to rebuild an Army that only five years before had stood battle-tested and victorious.

Today, once again, there are those who claim that the wolves of this world have been driven from the door, and that we can dispense with the military power that kept them at bay. Nothing could be further from the truth.

Role of Armor in a Changing World

Although we have witnessed unprecedented changes in Europe over the past months, the Army's fundamental strategic mission has not changed. That mandate is simple — to deter aggression and to defeat attacks against our nation's interests wherever they occur.

In order that you understand clearly how the Army will execute its mis-

sion, I want to outline the Army's vision of the future and the place of the Armor Force in that vision. I also want to highlight our plans to shape the force for this decade and beyond. Finally, I want to challenge each of you to meet the high standards of professionalism that will be essential to a trained and ready Army in the years to come. For, the success of that Army will rest on the shoulders of the leaders and soldiers who serve our nation with pride and distinction.

Just as the mission of the Army has not changed, there has been no alteration of the role of the Armor Force. Armor continues to provide the commander with the mobility and firepower needed to win quickly and decisively. Armored forces remain vital to dominating the modern battlefield, and their readiness gives pause to enemies who would threaten us.

Although we can applaud the changes that are occurring in the Soviet Bloc, we must not forget that even as the Soviet empire is undergoing radical and sometimes violent changes, Soviet military capabilities remain massive.

We must remember also that history is replete with examples in which the collapse of mighty empires ripped apart the established order, resulting in uncontrolled instability and untold human suffering. If recent events are an indication, there is no reason to believe that the disintegration of the Soviet empire would be any different.

Even as our attentions and emotions are drawn to the events in Europe, we must retain a broader perspective. For, in this complex

world, there is one simple truth: the United States is a global power with interests around the world. To remain a global power and to protect its interests in the face of powerful adversaries, it must have a powerful Army. And at the heart of that Army will be the Armor Force. The growing arsenals of tanks, artillery, and other sophisticated weapons in the possession of nations around the world that do not share our commitment to peace and freedom are persuasive arguments for retaining the devastating combat power of armor units.

Ever since the days of the horse cavalry, mounted troopers have performed the vital missions of reconnaissance, security, and decisive maneuver to destroy the enemy. Although the weapons systems and organizations have evolved considerably since buffalo soldiers patrolled the plains of the American Midwest, these missions and the attributes required of the Combat Arm of Decision have not, and will not change.

First, armor of the future must continue to be mobile — and armor units must be able to use their mobility to see, disrupt, deceive, and destroy the enemy. Second, the Armor Force must be agile — able to act faster than the enemy can react. Third, the mission to close with and destroy the enemy requires that armored forces be survivable in the blazing cauldron of modern combat.

Armor — like the Army — must also be versatile to respond to crises, conflicts, and contingencies worldwide. Its soldiers, units, and leaders must be prepared for missions that span the spectrum of conflict, from contingency operations that require relatively small armored formations to high-intensity

combat in which massive mechanized armies collide.

Whatever the mission, the Armor Force must be lethal — lethal to crush enemy resistance, lethal to survive the brutal clash of armored combat, and lethal to dominate the battlefield against the best force any adversary can hope to field. To achieve this kind of lethality, we must combine technological leverage with unmatched tactical and technical competence. Then we must integrate mobility, firepower, and shock action — the essence of Armor — with the other elements of the combined arms team.

Finally, we must be able to configure armored formations into powerful and deployable force packages. The superb mobility our armored systems enjoy today on the battlefield must be enhanced, and accompanied by the ability to deploy them from the continental United States to trouble spots around the world.

Our objective is to ensure that sufficient strategic air and sea lift is available to allow us to project overwhelming land combat power to wherever it is needed, in a timely manner. But we in the Army must do our part to enhance strategic mobility by developing lethal, survivable, and mobile systems that facilitate rapid deployment by air and sea.

Acquiring systems that combine the strategic and tactical mobility necessary to project power effectively, and with the survivability and lethality essential for victory on 21st century battlefields, will require us to apply innovative solutions that take full advantage of emerging technologies. We must aggressively pursue advances in areas such as composites, active and passive

countermeasures, and modular armor. In the near term, we will meet our needs by procuring an armored gun system that uses currently available technology to provide air-droppable armored firepower to our contingency forces.

The characteristics I have outlined describe what the Armor Force of the 21st century must be — a force that is trained and ready when it is called on again to march to the sound of guns. As we work to this end, we are building on a solid foundation, for, the Army of 1990 is quite simply the finest peacetime force this nation has ever fielded. And in the forefront of that Army is our Armor Force — the best trained, best equipped, and best led in the world.

Imperatives for Today and Tomorrow

The Armor Force of the future will have the characteristics just described only if we adhere to the six enduring imperatives that have forged the Army and the Armor Force of today. In an era of great change, they provide continuity of purpose and assure continuity and adequacy of capabilities.

The first imperative for Armor is to maintain a flexible, warfighting doctrine — the principles that guide our actions on the battlefield. The Armor Center, as the proponent for mounted, mobile combat, has been central to much of the progress we have made over the last decade in the development of maneuver doctrine and the embedding of that doctrine in all our preparations for war. The Armor Center will continue to play an important role as we develop the concept of AirLand Battle-Future, the doctrine that will carry us into the 21st century.

As our doctrine evolves to meet the challenges of the future battlefield, the challenge for Armor leaders is to ensure that the unique and timeless characteristics of the mounted force are effectively incorporated in the way we fight the battles of the next century. Then you must translate these doctrinal principles into weapons, organizations, training, and leader development programs that will generate powerful, fielded capabilities.

The second imperative is to maintain an appropriate mix of forces. The Army of tomorrow must have an effective mix of heavy, light, and special operations forces, an appropriate blend of active and reserve elements, and a combination of forward deployed, contingency, and reinforcing forces.

In view of the collapse of the Warsaw Pact, there are those who are anxious to write the obituary for the Armor Force, arguing that we only need light forces for contingencies such as Panama. Nothing could be further from the truth. Regardless of the fate of the Soviet empire, armor forces will remain the decisive element of land power and an indispensable component of our future force mix. Because potential enemies have extensive armored formations, the United States must retain formidable, ready armored forces capable of fighting and winning on the high-intensity battlefields of the future. For, only such forces will provide the credibility necessary to deter such conflicts.

The Army of today and tomorrow will be an integrated combined arms team. The colors of the Armor patch say it all. The red, blue, and yellow symbolize the spirit of combined arms — a spirit that is firmly fixed in the hearts of mounted troopers and that must be the hallmark of the entire Army. For,

only by integrating the unique capabilities all of our branches and components — heavy with light, active with reserve — will we be an Army that is capable of dominating any battlefield, against any enemy. Such an Army will be credible for deterrence and capable of defense.

The next imperative is to continue to modernize our Army. The realities of the budget have forced us to make some difficult decisions on modernization. The fact is that we cannot afford every system that we want or that we need. As a result, we have made some tough choices to ensure that the Army has the essential warfighting capabilities that our nation needs today and that will bring victory in the future.

Some procurement of near-term improvements in capabilities has been sacrificed in order to fund research and development that will prevent our soldiers from being overmatched by forces hostile to our interests in the decades ahead. For example, we have virtually eliminated production of the M1A2 tank in order to pursue the Armored System Modernization Program.

Although we are forced to accept some risk in the near future, the Army is irrevocably committed to the long-term modernization of our armored forces. Armored System Modernization and the light helicopter are the Army's highest modernization priorities. For, we cannot and we will not ask young Americans of the next generation to battle armor forces of the 21st century mounted on 20th century technology. To this end we are putting resources into the development and acquisition of the armored vehicles that our soldiers will need in the years to come.

Modern equipment in the hands of poorly trained soldiers is of little

benefit. So, the fourth imperative shaping the Armor Force is to conduct tough, realistic training to high standards — the kind of training that has served as the hallmark of the Armor Force for a half-century, and that has been a model for the rest of the Army. The importance of training cannot be overstated, for training is the foundation of readiness and essential to maintaining a quality force. And the talented young men and women who fill our ranks today will stay if they continue to be challenged by tough, demanding training.

As we shape the Army of the future, we must ensure that training remains our top priority. Accordingly, we will not cut back on our commitment to training. For example, the pace of operations at the combat training centers is being sustained, for they are essential to maintaining the ability of units to operate as a combined arms team. Indeed, we are increasing our efforts to integrate heavy and light forces by expanding the number of combined rotations.

Because the cost of such training is increasing, we must ensure that our soldiers receive the maximum benefit from every training dollar by taking full advantage of simulations and training devices. As you look at innovative ways to train, however, never lose sight of the overriding importance of mastering basic armor skills that serve as the foundation for trained and ready units. One of the most important lessons taught at the CTCs is that solid basic skills really make the difference between victory and defeat.

To help squeeze the best training out of each dollar spent, we are continuing our campaign to improve training quality by publishing FM 25-101, the companion manual to FM 25-100. This manual is aimed at battalions and companies and provides

clear guidance on implementing the training doctrine outlined in FM 25-100. Distribution of FM 25-101 should be completed this year, and its use should assist leaders in developing a well planned and executed training program.

Quality training requires quality leaders, and quality soldiers deserve nothing less than the best. Therefore, the fifth imperative is to continue to develop the competent, confident armor leaders at all levels. Developing these leaders is one of our greatest responsibilities, and perhaps our greatest legacy.

Initiative, imagination, and bold action have characterized the Sheridans, Mackenzies, Pattons, and Abramses throughout the history of cavalry and armor. Armor leaders of tomorrow, as today, will have to be decisive, even in the "fog" of war. Such bold imaginative leaders are not born, they are the result of careers spent dedicated to the study of the military profession. Armor has led the way in the development of such leaders and must continue to focus its efforts on developing officers and NCOs who reflect the traditional cavalry spirit of initiative, resourcefulness, courage, and tenacity.

The final imperative, but the most important, is to maintain a quality force. Quality is the linchpin of the entire Army and, indeed, is essential to the very fabric of our national defense. For, in the final analysis, it is the quality of the combat soldier that determines the fate of nations.

Vision of the Future

Unrelenting adherence to these six imperatives has forged an Army that is the best in the world — an Army that stands as a mighty bastion for peace, and that serves as the ultimate guardian of our nation's security. With the imperatives

as our guideposts, we must move forward aggressively to shape the Army and the Armor Force to respond to the challenges of the changing international environment and of increasingly austere budgets. We must apply the lessons of our past and take command of our future. For, if we do not, someone else surely will.

Although we must adjust to declining resources, I want to make it clear that we will not compromise, equivocate, or yield on the six imperatives. We cannot allow the sweat we have expended, and the success we have achieved in building the trained and ready Army of today to be squandered away. Even under the most Draconian budgetary constraints, we must never accept an Army that is undermanned, poorly trained, or ill-equipped — for such an Army cannot protect our nation in an uncertain world.

Now is the time to roll up our sleeves and to continue to forge the thunderbolt — responding to challenges to our vital interests with forces that can strike with devastating effectiveness. In short, let's use the talents that brought us victory in the Cold War to preserve our achievements.

Accordingly, over the course of the next several years, we will carefully, deliberately, and gradually shape a smaller force. This is a difficult course of action, but essential if we are to maintain the readiness, training, and quality that stand as the bedrock of our nation's security in the years ahead.

As a result of the reshaping of the Army, the Armor Force of the next decade — like the rest of the Army — will be smaller. But, it will continue to be second to none. We will continue to have units forward deployed — although in smaller

numbers — in Europe and the Far East. And we will have forces coiled in readiness within the United States — prepared to respond to contingencies around the globe, with active and reserve units poised to reinforce combat operations anywhere in the world.

If we are to retain an Armor Force that has the characteristics essential to the Army we will need in the future, it must have leaders of dedication and vision — leaders who will ensure that Armor remains relevant to a changing battlefield and who are able to integrate its unique contributions with the rest of the combined arms team.

In the 1930s, while some were wailing about the demise of the horse cavalry, General Chaffee and other farseeing professionals developed the doctrine and organization that formed the foundation for today's Armor Force. Although the horse no longer carries mounted warriors into battle, the mission, the attributes, and the spirit of the cavalry live on today — as relevant now as ever before. The Armor Force will remain a central element of our Army into the foreseeable future as long as in your ranks there are Pattons and Chaffees to lead it.

Professionalism

Although we face some challenging times ahead, and the Army will grow smaller, there will always be room for capable, dedicated young soldiers and leaders within our ranks. We will continue to be a highly competitive profession, because a trained and ready Army requires soldiers and leaders who are professionals in every sense of the word. It is professionalism that will guide all of us through the stormy seas ahead, and it is professionalism that serves as the ultimate antidote for uncertainty about the future. Profes-

sionalism is neither easy nor free. It comes from an unrelenting dedication to the principles of competence, responsibility, and commitment, each essential to professional development and each vital to the Army of tomorrow.

First, each of us must be competent in the profession of arms and expert in the art of war. Competence is not an inherited trait — it grows from study, discipline, and plain hard work. It comes from sharing ideas and innovative thinking. Contributions such as the Armor White Paper developed at the Armor Center are extremely useful to these efforts as they help stimulate informed discussion throughout the Army community about the role of armor.

For our younger officers, competence grows from one of the greatest sources of practical knowledge — the corps of noncommissioned officers that forms the backbone of the Army. Through the ages, the most celebrated leaders in the profession of arms began their rise with the simple words, "Sergeant, show me how."

But competence alone is not enough. To be a professional, we must willingly embrace responsibility — responsibility for the performance of our units and responsibility for every soldier entrusted to our care. We need leaders in the Army who personally practice every day of their lives the guidance of George Marshall: "When evening comes and all are exhausted, hungry, and dispirited, you must put aside personal fatigue, and look first after the needs of your soldiers."

Finally, a professional must be committed to the profession of arms and to the nation. He must be willing to serve in the difficult assignments, in the isolated posts, in the tasks that drain every fiber from his

being. And he must be willing to risk his very life in the defense of his country. It is this commitment that lends meaning to sacrifice; it is this commitment that gives a vision to see beyond the next hill; it is this commitment that brings honor and humility to personal achievement.

Those qualities of competence, responsibility, and commitment make up the professional of today — a leader of rare distinction and an asset to be carefully nurtured throughout an entire lifetime.

Conclusion

Our profession asks much of us, but that is not surprising, for ours in a special calling. We are entrusted with a vital responsibility — the protection of our great nation. As leaders, we are entrusted with America's most treasured asset — the young men and women who have volunteered to serve their country.

Forty years ago, a young Californian named Robert Young enlisted in a peacetime Army — an Army in the midst of a world exhausted from the cataclysmic struggle of the greatest war in history. Assigned to the 8th Cavalry Regiment, he was unexpectedly and violently thrust into the crucible of combat in a country called Korea. In the lead tank of the lead company, he suddenly came under a devastating barrage of enemy mortar and automatic weapons fire that decimated his company and left him severely wounded. Ignoring his own pain, he held his position, directed advancing tanks against the enemy, and became the rallying point for his battalion. Finally, after his heroic and single-handed defense had turned the tide of the battle, PFC Young died from his wounds.

He was a cavalryman who understood that freedom isn't free — who

"Competence is not an inherited trait — it grows from study, discipline, and plain hard work. It comes from sharing ideas and innovative thinking."

understood what some fail to realize — it is bought with the sweat, the courage, the commitment, and sometimes the blood of the American soldier. To those who have freedom, and to those who hope for freedom, the American soldier — like Robert Young — is the embodiment of the ideals and principles of individual liberty for which this country stands.

We — you and I — have a sacred duty to the men and women we lead, to the United States, and to freedom everywhere. We can never relax our efforts to maintain a trained and ready Army to support and advance the principles for which our nation stands. In this task we must not — and shall not — fail.

Editor's Note: This article is an adaptation of GEN Vuono's address to the Armor Conference on 8 May 1990.

General Carl E. Vuono has been Army Chief of Staff since June 1987. He was commissioned in the Field Artillery upon graduating from USMA in 1957. He commanded 1-77 FA, 1st Cavalry Division in Vietnam; DIVARTY, 82d Airborne Division; 8th Infantry Division (M), USAREUR; U.S. Army Combined Arms Center and Fort Leavenworth; and the U.S. Army Training and Doctrine Command.

"Old Ironsides" - First Into Rome

*The 1st Armored Division
drew two of World War II's
toughest assignments -
North Africa and Italy*

WORLD WAR II CAMPAIGNS

Algeria - French Morocco

Tunisia

Naples - Foggia

Anzio

Rome - Arno

North Apennines

Po Valley

WWII COMMANDERS

MG Bruce R. Magruder
July 1940 - March 1942

MG Orlando Ward
March 1942 - April 1943

MG Ernest N. Harmon
April 1943 - July 1944

MG Vernon E. Prichard
July 1944 - May 1945

*This article was prepared by the
ARMOR staff. Major sources in-
cluded Elizabeth Rhoades Akroyd's
"The First Armored Division 1940-
1990," and Shelby L. Stanton's "Order
of Battle -U.S. Army in World War II."*



M3 OUTSIDE MAKASSNY, TUNISIA, IN 1943.

Although the history of the 1st Armored Division begins in 1940, its heritage is rooted in the 7th Cavalry Brigade (Mechanized), formed in 1932 as the Army's first true mechanized fighting force. The concept of the 7th Cavalry Brigade carried into the new armored divisions: that mechanized forces should stand alone, rather than being simply tank support for infantry divisions.

The brigade became the nucleus for the new division and its former commander, Major General Adna Chaffee, became the first commander of the Armored Force, which included the 1st and 2d Armored Divisions. The first commander of the 1st AD was MG Bruce R. Magruder, who came from the provisional infantry tank brigade at Fort Benning.

The division trained for war for two years, but frequently lost key personnel as later armored divisions

were organized. The 1st AD, for example, provided cadre for the formation of the 4th Armored Division, organized in April 1941.

MG Orlando Ward was the new commander of "Old Ironsides" when the 1st AD shipped out for World War II. Embarking on the Queen Mary, the division went first to Ireland, then England, to prepare for the invasion of North Africa.

NORTH AFRICA

The mission of Operation TORCH was to invade Algeria, Morocco, and Tunisia — on North Africa's western shores — to keep Rommel's forces from moving west, away from the Libyan desert where the Germans were fighting a war of movement against British forces closing in from the east. Algeria and Morocco had been part of the French colonial empire, and after



1ST AD TANKS ROLL ONTO THE ANZIO BEACH

the fall of France in 1940, were controlled by forces of the French Vichy government. No one knew whether the French would oppose the landings, which took place in November 1942.

As it happened, they did. Attempting to land at Oran, Algeria, as part of the Center Task Force of the three-pronged invasion, the Third Battalion, 6th Infantry Regiment, part of Combat Command B of the 1st AD, took 180 casualties when French shore batteries opened up on two British ships bringing them ashore. Only 47 soldiers of the battalion were unhurt.

French resistance subsided in a matter of days after the landings, allowing the 1st AD to move eastward to Tunisia, where reinforcements were pouring in to bolster the sagging Afrika Korps and to oppose this new threat to its supply lines. By late November, 1st AD units had

tangled with Axis forces. The 1st AD's CCB, fighting at El Gueussa Heights, sustained heavy equipment losses during the first week of December and was placed in reserve. Its next attack, into the Ouseltia Valley, was more successful.

Combat Command A fought at Faid Pass in early February, pushing on to Sidi Bou Zid, where it sustained heavy losses on 14 February. A week later, a relief force counterattacked to support CCA and also sustained heavy losses. CCB successfully reacted to a German attack on Tebessa, leading to the beginning of a German withdrawal.

Despite their considerable tactical success in the series of battles now lumped together as the battle of Kasserine Pass, the Germans were denied operational success: they never drove any farther east.

Three more months of hard fighting in Tunisia eventually forced a German withdrawal toward Bizerte. During this period, PVT Nicholas Minue, a 1st AD soldier, was awarded the Medal of Honor posthumously for his brave charges of enemy gunners entrenched on a hill. His was one of the few awards of the Medal in the North Africa campaign, which ended in the second week of May with the surrender of the German forces in Africa.

ITALY

"Old Ironsides" returned to Morocco to rest and refit before the Italian campaign. Its combat experiences, good and bad, became the basis for many changes in training, organization, and tactics for both the 1st AD and the other armored divisions still preparing for war. After the successful Sicilian campaign, the Allies planned a two-



SHERMAN OF THE 1ST TK. BN. CROSSES THE ARNO RIVER NEAR CASOINA ITALY.

pronged thrust up the Italian boot, the U.S. Fifth Army moving along the western coast of the peninsula, with the British Eighth Army pushing up the Adriatic side. Two of the 1st AD's subunits, the 27th Armored FA Bn., and the 16th Engineers, were part of the initial landings at Salerno in early September 1943. The rest of the division was to follow once the American forces were ashore.

After the Salerno landings, German resistance crumbled, and the invasion force pushed ahead to Naples. During this period, soldiers of the 16th Engineers bridged a river on the average of once every three or four days. Naples had been abandoned by the retreating Germans, who fell back to their Winter Line, one of the first of a series of great defensive barriers thrown up across the peninsula. The hilly, river-crossed country greatly favored the defense, which could situate on high ground and cover the valleys with withering indirect fire.

By November, the remainder of the 1st AD arrived in Italy and assembled for the assault on the Winter Line. The 6th Armored Infantry, a 1st AD subunit, fought sharp actions along the Rapido

River and in the Mount Lungo area. Another action, at Mt. Porchia, resulted in heavy losses, with the 6th Infantry and Co. A of the 16th Engineers winning Presidential Unit Citations for their part in the action. Although the Winter Line was pierced, the high country around Monte Cassino blocked any further advance to Rome.

In an attempt to break this defensive stalemate, the Allies planned an amphibious landing at Anzio Beach, hoping to threaten the German rear and force a withdrawal of German troops from the heights blocking the approach to Rome. While CCB of the 1st AD remained near Mignano, the rest of the division leapfrogged ahead through the new beachhead, fighting off German counterattacks on the beachhead while supported by heavy air and artillery bombardment. CCA and CCB linked up to break out of the Anzio beachhead and push toward Rome. They took heavy losses in a victory at Campoleone Station and pushed ahead despite counterattacks by German rear guards. The division fought through to Albano, and the first tank - from Company H, 13th Armored Regiment - entered Rome on 4 June 1944.

The pursuit up the Italian "boot" continued through July, when the 1st AD was reorganized in light of past battle experience. The regimental structure gave way to three separate tank and infantry battalions, and strength was cut from 14,000 to 10,000. In addition to CCA and CCB, division artillery, and division trains, a new headquarters was formed, called Reserve Command, to control the division reserve. The "new" 1st AD was more flexible, with roughly equivalent infantry and tank battalions capable of being tailored to a greater variety of missions. The additional infantry would be extremely important in the mountain fighting ahead.

In much of the fighting that followed, the 1st AD tankers often had to fight as infantry in the face of horrible winter weather, steep mountain terrain, and the formidable German defense, called the Gothic Line, that blocked the northern advance. The division was only thirty miles from the Po Valley, but the steep Appenine Mountains aided the defense in maintaining a stalemate until the spring of 1945.

In mid-April, the Allied assault on the Germans entrenched in the northern Italian mountains continued again, with 1st AD units entering the Po Valley on 20 April. Milan fell on the 28th, and German forces in Italy surrendered four days later. Less than a week after, all German forces in Europe surrendered.

POSTWAR SERVICE

At the end of June 1945, 1st AD units transferred to Germany for occupation duty until the following spring. The unit headquarters returned to the United States and was inactivated, although many of the 1st AD subunits remained in

Germany as part of the U.S. Constabulary, the occupying military government. The 6th Infantry remained stationed in Germany until the 1950s.

KOREA

The success of North Korean tank units early in the war led to the reactivation of the 1st AD at Fort Hood on 7 March 1951. While the division did not participate in the war, it successfully fought another battle closer to home, the battle to integrate the Army. The division commander, MG Bruce C. Clarke, had commanded U.S. Constabulary units in Germany after the war and had successfully integrated black soldiers into these units, and upon taking command of "Old Ironsides" in 1951, he did the same thing. Although the rest of the Army was not integrated until 1953, black and white officers and men worked side by side in the 1st AD almost two years earlier, as photos in the division yearbooks show.

As the only combat-ready armored division in the United States, the 1st AD was first to receive the new M48 tank in 1953, and the following year became involved in tests of a new organization, "The Atomic Field Army," designed to be effective in a nuclear war.⁶

In February 1957, the 1st AD was one of the first of the new "Pen-tomic" divisions, made up of five elements, each independent enough to fight and survive on a decentralized, nuclear-ravaged battlefield. This organization lasted less than a year, and again, the 1st AD was reduced in size. One combat command survived the reorganization, becoming one of the battle-ready units of the Strategic Army Corps (STRAC), formed to fight limited wars, rather than nuclear Armageddons.



TROOP B, 1-1 CAV RETURNS FIRE IN AN AMBUSH NEAR KHE SANH, 1971.

The 1st AD reorganized again in 1962, this time as a "ROAD" division, which could be reconfigured more easily. The Army was seeking a versatile, multi-purpose type of formation to fight whatever kind of conflict developed. The combat command structure gave way to brigades, and aviation units were added. New vehicles, notably the M60 MBT and the M113 APC, were tested by the 1st AD.

CUBA AND VIETNAM

The year 1962 brought the 1st AD up to combat status again in time for the Cuban missile crisis. It mobilized and moved to Fort Stewart, Ga. by rail and air. The division conducted live-fire exercises and practiced amphibious landing techniques in the six weeks of tension that followed.

From 1965 to 1967, the 1st AD had a major role in training Vietnam replacements and lost many of its best soldiers to levies for the fighting in Southeast Asia. Then, relieved of its basic training mission, the 1st AD again attained combat-ready status. One occasionally sees the 1st AD patch on the right shoulder of a Vietnam vet. This is because two of the division's sub-

units, the 1st Sqn., 1st Cav., and the 501st Aviation Battalion, were never officially detached from the 1st AD when deployed to Vietnam.

Also seeing action were three 1st AD infantry battalions and a 2d AD artillery battalion, reorganized in 1967 as the 198th Infantry Brigade. Serving in Vietnam for five years, the 1st Squadron, 1st Cavalry earned a Presidential Unit Citation, two Valorous Unit awards, and three Vietnamese Crosses of Gallantry for action in Vietnam.

During the late 1960s, soldiers of the 1st AD deployed to Chicago for riot control duty during the racial demonstrations that followed the assassination of the Rev. Martin Luther King. The division also helped out in several other civil emergencies, including floods and hurricanes near its Texas base.

The 1st AD was to be disbanded in the post-Vietnam reductions in force, but a letter-writing campaign convinced officials to keep the 1st AD on the rolls of active units. Instead, it was decided to deactivate the 4th AD in Germany. The 1st AD took its place at Goepingen, its first "return" to Germany since the war. It has remained there ever since.



M3 LIGHT TANKS OF 66TH ARMOR TRAIN AT FORT BENNING, MARCH 1942.

WWII CAMPAIGNS

Algeria - French Morocco

Sicily

Normandy

Northern France

Rhineland

Ardennes - Alsace

Central Europe

50th Anniversary - 2d Armored Division

"Hell on Wheels" Rolled From Africa to Berlin

The 2d Armored Division, one of two U.S. armored divisions organized on 15 July 1940 and the only continuously active armored division for the past 50 years, began training at Fort Benning, Ga. under Major General Charles L. Scott.

Within two months, Major General George S. Patton had taken command. He would lead the division through 18 months of training, including three major maneuvers, before leaving for higher command.

Patton's spirit and hard-driving training techniques carried the division through seven major campaigns in WWII, including action in North Africa, Sicily, and Western Europe. Moreover, men of the 2d Armored were constantly tapped

for reassignment to form cadre for later armored divisions.

In three years overseas, "Hell on Wheels" captured 95,000 enemy troops and liberated over 22,000 Allied prisoners. It participated in the invasion of North Africa, conducted a daring end run to exploit gains in Sicily, earned two invasion arrowheads for its part in the D-Day invasion of France, and twice earned the Belgian Fourragere of the Croix de Guerre for its actions after D-Day.

It was a key unit in the breakout from the Normandy beaches, helped seal the Falaise Pocket, and was poised to attack east across the Roer River when the Germans began their Ardennes offensive. The 2d Armored successfully marched

WWII COMMANDERS

MG Charles L. Scott

July 1940 - January 1941

MG George S. Patton Jr.

January 1941 - February 1942

MG Willis D. Crittenger

February 1942 - July 1942

MG Ernest N. Harmon

July 1942 - May 1943

MG Hugh J. Gaffey

May 1943 - V-E Day

75-100 miles over icy roads to reach the fighting in Belgium. At Celles, the 2d Armored caught and destroyed the German 2d Panzer Division in the Celles Pocket. Fighting continued until the division succeeded in occupying Houffalize. Then it was relieved for a brief rest to refit.

Six weeks later, the 2d Armored crossed the Roer River, despite intense German counterattacks, and attacked across the Cologne Plain, taking Verdingen, on the Rhine River, on 4 March 1945.

One of its subunits, a company of the 17th Armored Engineer Bn., earned a Presidential Unit Citation for its construction of a pontoon bridge across the Rhine River in the record time of less than seven hours while under fire. By March 26, 1945, the division was moving into Germany, helping to seal off the great Ruhr industrial complex and trapping 350,000 German troops.

The division moved so quickly, overrunning 3,000 square miles of German territory, that temporary security battalions had to be formed to secure its rear areas until additional troops could move up. In many actions, the division was called upon to help consolidate bridgeheads, as the Germans stubbornly fought to stem the tide. At Lippstadt, Germany, the 2d Armored linked up with the 3d Armored Division and began a series of difficult river crossings on their battle east. During the course of April 1945, "Hell on Wheels" crossed the Weser River, the Leine, and the Oker before making a 57-mile final push to the Elbe at Magdeburg. Following the successful assault on that city, the 2d Armored moved to an area south of



2D ARMORED DIVISION TROOPS ASSEMBLE IN ENGLAND BEFORE D-DAY



CREW OF A 66TH ARMOR SHERMAN LOAD AMMO



RUSSIANS WATCH AS THE 2D AD CROSSES THE ELBE.

Braunswieg. Several days of fighting followed when a task force of Nazi fanatics held out in the Forst Konigslutter. They were surrounded by elements of the 2d Armored and destroyed.

VE Day found the men of "Hell on Wheels" assembled south of Wolfenbuttel, where there was a dismounted review for visiting Russian troops.

By the end of June, 3,000 of the 2d Armored's men with the longest service left for the States. The remainder of the division road marched east, crossed the Elbe at Torgau, and covered the 100 miles to Berlin through territory liberated by the Russians. "Hell on Wheels" was the first American division to occupy the city.

After serving on occupation duty in Germany, men awaiting transports home spent the Christmas holidays at the French channel port of Calais or on liberty at the Riviera beaches before shipping home to New York. The division was dispersed at Camp Kilmer, N.J. Those receiving discharges were transferred to posts near their homes, while the rest received orders to Fort Hood, where the division was reorganizing.

The reorganized division was filled with remnants of the 20th Armored Division and other deactivated divisions. It was reorganized from its "heavy division" status in WWII to a lighter organization. Its Shermans gave way to the newer M26s.

In 1950, two subunits, the 6th Tank Battalion and the 92nd Ar-

mored Field Artillery Battalion, left for Korea, and the rest of the division became a training base for replacements in the Korean conflict. Later that year, fears arose that the Soviets would attempt to overrun Europe while the United States was embroiled in Korea, so the 2d Armored was once again brought to full strength. After parading in New Orleans on 4 July 1951, the 2d Armored was again on its way to Europe.

That fall, the 2d Armored was again crossing the Rhine, this time as part of maneuvers to train against the possibility of a Soviet attack on the Rhine bridges. This maneuver was the first of many Cold War training exercises in the next six years, as the NATO coalition grew in strength. In 1957, the 2d Armored returned to Fort Hood.

During the Berlin Crisis of 1961, an advance party of "Hell on Wheels" returned to Germany to prepare equipment for the division, if needed. Again in 1963, the division returned to Germany, this time as part of Exercise Big Lift, a Seventh Army maneuver involving river crossings and counterattack of an "enemy" penetration.

From 1965 to May 1967, the division's mission changed again to basic combat training. Several 2d Armored units went to Vietnam in mid-1967. The 50th Infantry and 2d Sqn., 1st Cavalry joined the 1st Cavalry Division in Vietnam, and other subunits were later assigned to the 198th Light Infantry Brigade.

Stateside duty included assisting civil authorities in a major hurricane



that hit Texas in 1967, and the organization in 1968 of two brigades of troops for civil disturbance control following the assassination of Dr. Martin Luther King.

The stateside routine of training, new equipment tests, and field exercises continued until 1978, when a brigade task force was sent to Garlstadt, in northern Germany. This subunit, 2d Armored Division (Forward), remains stationed in Germany today. Its purpose has been to maintain combat readiness and be prepared to receive the rest of the division's subunits should NATO be attacked.

As this issue went to press, the extent of cutbacks in the Army as a result of U.S.-Soviet peace initiatives remained unclear. "Hell on Wheels" may face the budget axe as Congress attempts to save defense dollars; it is an expensive division to keep on active duty. Ironically, the decision on its future may come at about the same time the storied division celebrates its 50th year of service.

This article was prepared by the ARMOR staff, drawing on MG Briard P. Johnson's "Condensed History of Hell on Wheels," and Shelby L. Stanton's "Order of Battle - U.S. Army in World War II."



Learning the Hard Way:

The Coordination Between Infantry Divisions and Separate Tank Battalions

During the Breakout from Normandy

by Captain Richard S. Faulkner

As the 83d Infantry Division's attack toward Sointeny began on 10 July 1944, the 2d Platoon leader of A Company, 746th Tank Battalion, started to worry. His platoon was attached to 2d Battalion, 329th Infantry Regiment with orders to provide any support possible to the battalion. The 2-329 battalion commander had turned down the platoon leader's request for infantry to cover the tank platoon's exposed flank. As the lone platoon maneuvered through the maze-like hedgerows of the French bocage country, the platoon leader's worst

fears became reality. Without warning, well-concealed antitank guns opened fire on the American tanks at point-blank range. Within minutes, the 2d Platoon had ceased to exist.¹

The experience of the 2d Platoon is but one example of how the failure of light infantry and armor to work together led to high losses for both arms during the breakout from Normandy. Contrary to the popular image of American armor blitzing across France, the reality was a slow and methodical fight through the

hedgerows of Normandy. This fight was a slugging match that required infantry and tanks to coordinate their efforts for mutual survivability.

The breakout from the beachhead quickly showed that both arms were ill trained, organized, informed, and equipped to meet this challenge. By studying the use of armor by the 1st, 9th, 29th, 30th, and 83d Infantry Divisions from 6 June through 31 July 1944, we can better understand the problems of combined light infantry and armor operations. All the infantry regiments of these divisions

"Contrary to the popular belief of American armor blitzing across France, the reality was a slow and methodical fight through the hedgerows of Normandy. This fight was a slugging match that required infantry and tanks to coordinate their efforts for mutual survivability."



FIGHTING ALONG A HEDGEROW IN FRANCE.

fought and moved on foot. Though not classified as light infantry during World War II, these units are very close in organization and tactics to the "light-fighters" of today's Army.

It is also important to understand the nature of warfare in the hedgerows. The hedgerows of Normandy are tall mounds of earth with impenetrable growths of trees planted on top. Norman farmers built the hedgerows to protect their fields from the ravages of the sea winds. Over time, the hedgerows grew into walls enclosing each small farm. The Norman countryside is criss-crossed by blocks upon blocks of these natural fortifications. Though the landscape of Normandy is unique, it does provide examples of how infantry and tanks worked together in armor-limiting terrain.

Armor and Infantry Organization in 1944

One of the major problems encountered during the breakout from Normandy was that there were no armored units organic to infantry divisions. All separate tank and tank-destroyer battalions were corps assets, allocated by the corps commander, depending on the situation and the mission. In theory, the corps commanders had enough tank and tank-destroyer battalions to attach one of each to every infantry division.² However, tank losses following the invasion quickly drained the corps' ability to keep the infantry divisions supported with armor. As a result, the existing tank battalions constantly rotated among the infantry divisions in contact.

The majority of the tank battalions were attached to at least two different divisions during June and July. For example, the 746th Tank Battalion was attached to three different infantry divisions (the 9th, 83d, and 90th) from 12 June through 16 July 1944.³ These continuous rotations further weakened the corps' depleted armor assets, and prevented "habitual" attachment of specific tank battalions to specific divisions. These problems remained until the arrival of additional tanks allowed corps to maintain a "one-battalion-to-one-division" ratio, and a reserve.

Once an infantry division received a tank battalion, the division commander usually gave a tank company to each regiment. The regimental commander in turn would attach a tank platoon to each infantry battalion. The June 1944 *After Actions Report of the 745th Tank Battalion* stated that the best ratio for the attack was one platoon to each battalion, and in the defense, a pure company to the regiment as a counterattack force.⁴ The habit of reducing the tank battalions to platoon-size elements left many battalion and company commanders without units to command. The loss of control by the armor commanders proved to be a problem without a real solution. The armor commanders became coordinators and advisors to the division and regimental commanders. Because the Norman terrain precluded the mass use of armor, the diffusion of tank power was easier for the armor commanders to accept.

The tank platoon attached to the infantry battalion was normally not split any further, though employment of one or two tanks to a company was not uncommon. Commanders quickly discovered that tanks deployed below the platoon level suffered increased casualties due to the lack of interlocking support. The tank platoon was usually attached to the lead company or maintained as a battalion reserve. The infantry battalions used tanks mostly as mobile machine gun platoons to clear the hedgerows of enemy snipers and machine gun nests. The infantry provided the tanks additional "eyes and ears" to locate and reduce antitank guns and mines in the thickly-wooded Norman countryside.⁵ As units became more battle-wise, infantry company commanders often attached a rifle squad to their supporting tank platoons to provide the tanks direct flank security and route reconnaissance.⁶ When both the armor and infantry leaders understood the tactics and abilities of the other, the task organization worked extremely well.

Armor-Infantry Team Training

The major hindrance to tank-infantry cooperation was a lack of infantry and armor team training before the invasion. All infantry divisions were supposed to have received tank training in the United States as a part of their certification for overseas movement.⁷ Additional tank-infantry team training was to have been accomplished in England during preparation for the invasion. The amount and quality of training

in both the United States and England varied greatly from division to division, but for the most part was less than adequate.

Training in the United States was hindered by shortages of tanks available to the infantry divisions. These shortages were due to arguments over the employment of tank battalions, and an Army policy of stockpiling tanks in Great Britain for the invasion.⁸ The argument over the employment of the tank battalions was based on whether to gather all tanks into armor divisions, or to leave some tanks available to infantry divisions from corps pools. The solution was a compromise that decreased the number of tank battalions in armor divisions to free up tanks for the corps. The tank battalions released from the armor divisions were not available to the infantry divisions for training until late 1943,⁹ too late for most of the divisions in the Normandy campaign.

Armor and infantry training in Great Britain also proved to be poor. Training in the infantry divisions tended to focus on the assault of the beaches, rather than tactics for the breakout. No one seems to have given much thought to the problems of operating in the hedgerows.

Many of the infantry regiments that would fight in Normandy received only cursory armor training in Britain. The only combined arms training the 747th Tank Battalion received consisted of "taking infantry for tank rides on the Devon Moors."¹⁰

Armor and infantry team training did not cease with the unit's deployment to combat. Real bullets and casualties quickly showed how ill-prepared infantry and tank units were to work together. When possible, the corps and division com-

manders pulled units out of the line for tank team training. The 747th Tank Battalion, for example, was pulled out of combat from 20-28 July 1944 to practice reducing hedgerows with units from the 29th Division.¹¹ This type of training was common throughout June and July, as units developed their own tactics to deal with situations for which they had not been prepared.

The lack of combined arms training before the invasion greatly contributed to the high losses in tanks and infantry. The American soldier in Normandy received the majority of his tank-infantry training through the school of hard knocks. Combat proved to be the catalyst that welded the two arms into an effective fighting team.

Early Problems With Tank-Infantry Coordination

Lack of Cohesion and Team Building. During the Normandy Campaign, the tank battalions were unable to effectively fit into the infantry divisions' organization because the divisions did not "own" the tank battalions that supported them. Effective working relations and operating procedures were difficult to establish when the divisions were constantly changing tank battalions. Personnel turnover and the incessant use of the tank battalions, further aggravated this problem. A soldier of the 743d Tank Battalion observed,

"A tank company might work with one infantry regiment one day and another regiment the next, but it was always working, always moving ahead on an attack, or remaining on the alert in an advanced road block or defensive position."¹²

The overall result was poor cohesion and team-building between the tankers and the sup-

ported unit. These problems would remain until late 1944, when additional tank battalions allowed semi-permanent attachments of armor to all infantry divisions.

When infantry divisions were finally allowed habitual relationships with their tank battalions, cohesion problems tended to go away. The 1st Infantry Division was unusual in that it had the 745th Tank Battalion attached to it from June 1944 to the end of the war. The 1st Division habitually attached tank companies and platoons to specific regiments and battalions. The men found that the "permanent attachments of tank platoons to battalions increased the respect for capabilities of the other."¹³ The tankers of the 745th began to feel that they were part of a team, and responded with greater loyalty to the infantrymen whom they supported.

Communications Problems. Communication between tanks and infantry was the major technical problem of the combined arms team. The radio sets issued to infantry platoons and companies would net only limited frequencies with tank radios.¹⁴ "Walkie-talkie" squad radios were ineffective in infantry-armor operations because of static produced by the tank engines.¹⁵ Infantry leaders had to climb on the tanks to talk to the tank commanders. Because the tanks buttoned-up in combat, the infantryman had to first beat on the tank to get the tank commander's attention. This proved to be a dangerous and inadequate way of transmitting orders under enemy fire. Early use of hand and pyrotechnic signals met with only limited success. These type signals were difficult to see and understand from a buttoned-up tank in close terrain.

Inventive American soldiers provided many solutions to the com-

munications problem. Tankers of the 743d Tank Battalion linked field phones to their vehicles' intercom system. The field phones allowed the infantry leaders to pass on instructions without exposing themselves to enemy fire.¹⁶ All tank battalions in Normandy eventually developed similar systems. These systems worked well as long as the infantry could keep close to the tanks. When the tanks received an independent task to accomplish, communications again broke down. The communications problem was completely solved when additional infantry-type radios became available in July for installation in the tanks.¹⁷

Lack of Tactical Understanding Between the Arms. The greatest problem encountered in tank-infantry operations in Normandy was the failure of both arms to understand the tactics and employment of the other. This problem was a direct result of the tank battalions not being organic to the divisions for training and combat. A 1st Army after-action report stated, "Many of our infantry commanders do not possess sufficient knowledge of the proper employment of tanks as an infantry support weapon, and insufficient opportunity is given in the infantry division in training to become familiar with, and work with, the separate tank battalions."¹⁸

Armor leaders, in turn, did not understand the mechanics of working with the infantry and could not advise the infantry commanders. On the battlefield, this lack of understanding would cause undue confusion, casualties, and lost opportunities.

Many infantry commanders tended to use their attached tanks and tank destroyers as nothing more than mobile pillboxes.¹⁹ If infantry commanders subscribed to



HEDGEROW BOUNDARIES BETWEEN NORMAN FIELDS HINDERED MANEUVER.

the mistaken idea of armor invulnerability, the other extreme was to use tanks in unsupported attacks. Experience showed these tactics to be a great waste of a limited resource. The infantrymen and tankers soon found that no advance was possible without close coordination and support. Each had to explicitly rely on the abilities and firepower of the other to survive. Unfortunately, this proved to be a lesson that had to be painfully relearned by each new division that landed in Normandy.

The tank battalions were not without their share of tactical misconceptions. The tankers had conducted a majority of their training as part of a whole battalion or company. Armor officers, remembering the French mistake of parceling out tanks to the infantry in 1940, were reluctant to support the infantry divisions. Both officers and men had come to think of tanks as weapons that used speed and mass to break through all enemy resistance. Working in the hedgerows with the infantry forced the tankers to re-examine their concepts of armored operations. Many tankers learned the hard way that unsupported "blitz" attacks through hedgerows were a fast way to win Purple Hearts.²⁰

As combat experience grew, infantry leaders relied more on the input and judgment of the armor commanders. The 1st and 9th Infantry Divisions, both veterans of campaigns in North Africa and Sicily, rapidly assimilated their tank battalions, and had fewer problems with tank-infantry cooperation. An officer in the 1st Division pointed out, "It was found most important to have a platoon leader's recommendation prior to an attack, since he was much better qualified to determine routes of approach."²¹

The 29th, 30th, and 83d were "green" divisions with little experience in armor operations. The failure of these units to learn from the mistakes and lessons of others was best illustrated in the burning tanks and dead American soldiers that dotted the Norman countryside.

The 30th Division's 14-15 June attack toward the Vire-et-Taut Canal was slowed by regimental and battalion commanders' failure to listen to the advice of officers of the 743d Tank Battalion which had learned some hard lessons by previously supporting the 29th Division. One infantry battalion S3 ordered a tank platoon of the 747th Tank Battalion, though out of ammunition, to sup-



AFTER NORMANDY BREAKOUT, INFANTRY OF THE 29TH DIVISION MOVE THROUGH THE RUBBLE OF VIRE, FRANCE.

port an attack to keep up the morale of the infantry.²³

Overcoming the Problems

Early attempts at unsupported attacks by both branches proved costly. Tanks trying to climb over the hedgerows exposed the vehicles'

thin belly armor to close-range antitank fires. The tanks could not move until the infantry destroyed the antitank guns. The infantry could not destroy the antitank guns because the tanks could not suppress the enemy machine guns. The solution was to breach the hedgerow so the tanks could get to

the flanks or rear of the enemy before antitank guns could respond.

American soldiers quickly improvised methods of accomplishing this task. When they found the use of demolition charges alone ineffective, the soldiers hit on the idea of attaching two poles to the front of the tanks to bore holes in the hedgerows. This device allowed them to place the demolition charges deep inside the hedgerow.²⁴ Once the breach was made, the tanks and infantry would rapidly move in and secure the objective. The drawback to this method was the time it took to make the breach, and the dust kicked up from the explosion often alerted the enemy to the attack.

Sgt. Culin is credited with discovering that plow-like teeth welded to the front of the tanks enabled the vehicles to push directly through the hedgerows without stopping. These devices became standard equipment for tanks until the end of the campaign.²⁵

Another problem to overcome was the difference in mobility between



MONTHS AFTER NORMANDY, THIS M4 STILL HAD ITS CULIN DEVICE ATTACHED.

the tanks and the infantry. Infantry training did not include moving troops quickly around the battlefield to exploit success or fight off counterattacks. The infantry regiments depended on the truck companies of the division for most long-range movement. When terrain became more open, the tanks were still restricted by the movement of the foot soldiers, because the truck companies were not considered a combat asset.

To overcome this problem, the infantry often rode directly on the tanks for exploitations and hasty movements. The 9th Division's 60th Infantry Regiment and 746th Tank Battalion used this technique with great success during the 16 June attack on Reigneville.²⁶ Other units went as far as mounting infantry squads on tanks for assaults on hedgerows. This tactic was risky, but could provide a good mix of tanks and infantry at critical locations during an attack.

Normandy is also dotted with small towns and some fairly large cities. Narrow city streets could be more dangerous to tanks than the worst hedgerow. In small towns, the tanks would move under close infantry support and provide "bunker-busting" fires. In the cities, the infantry commanders would use some armor for close support, but would leave the majority of the tanks to cut off enemy retreat and reinforcements. The use of armor to cover the escape and counterattack routes was decisive in the capture of St. Lo and Cherbourg.

Summary

The Normandy campaign illustrates how infantry and tanks worked together in armor-limiting terrain. The breakout from the beaches proved that proper organization, training, and knowledge is essential for tank-infantry

cooperation. The organization of forces during the campaign did not provide adequate armor support to the infantry divisions. Because the tank battalions were not organic to the divisions, the building of teams and cohesion was hindered. It is also clear that training did not place enough emphasis on tank-infantry teams before combat.

This lack of training prevented both arms from understanding the tactics and employment of the other. Both tankers and infantrymen were forced to gain a working knowledge of the capabilities and limitations of the other before they could make progress. Even with these difficulties, American soldiers were able to improvise to solve most tactical problems. Survival compelled the two arms to work together and exchange ideas.

Notes

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⁴After Actions Report of the 745th Tank Battalion, June-July 1944, p. 1.

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²³Wilkes, p. 15.

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²⁶CPT Joseph B. Mittleman, Eight Stars To Victory, (Washington D.C.: Ninth Infantry Division Association, 1948), p. 169.

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The Regional Threat

by Lieutenant Colonel John K. Boles III and Captain Vincent C. Schmoll

This article is derived from the DCD Threat Briefing given during Armor Conference 1990.

For the last 30 years or so our focus has been on the Soviet Union as our primary threat, as well it should have been. But things have changed.

During the past year, we have witnessed dramatic and unprecedented changes on the world political scene. As widespread as these changes may be, perhaps the most far reaching and significant are the fundamental changes occurring within the communist world — changes that could potentially defuse, or in some cases inflame, the threat of military conflict throughout the world.

Although the Soviet Union remains the only country capable of destroying the United States, potential threats to U.S. interests and national security exist in every region of the world. Threat forces range from highly developed, well-organized military or paramilitary units possessing highly lethal weaponry to poorly organized groups who rely on small-unit operations, subversion, sabotage, and terrorism to support political aims and objectives. This is nothing new — these regional threats have been around for a long time. It's only been with the recent apparent reduction of the Soviet threat that their importance has come to the surface.

Volatile situations exist in many areas of the world, ranging from disagreements over national boundaries to differences in religious beliefs or involvement in drug traf-

ficking. The countries involved, however, should not be taken lightly. In many cases, their military capabilities are second to none, with the ability to employ nuclear weapons, chemical and biological weapons, and with a military arsenal of men and equipment to rival any country on earth. These countries have a vast potpourri of weapons and equipment from any country that sells arms. And the quantity and quality of armored vehicles pose no exception. This increasingly available and lethal weaponry in the hands of some developing nations will transform formerly minor conflicts in faraway lands into regional conflicts of potentially worldwide concern. As government loyalties or affiliations change, so then may change the types of weapons and from whom they are obtained. They may be antiquated or modern, imported or indigenous, but they will be effective on the battleground of the future. Older tanks, ATGMs, and recoilless rifle systems are still a deadly combination against a light force without tank support or extensive antiarmor weapons. An additional wild card in our intelligence preparation of the battlefield will be the variety of tactics encountered, loosely based on the differing combat doctrines taught by the various countries that have in the past supplied training packages or advisors in conjunction with the sale of their weapons systems.

There are those, then, who say the Soviet Union is no longer a threat — that it is now merely another Third World country with its own societal

and economic problems, like many other countries in the world.

There's no denying that the USSR has its share of internal problems, however, to say that the USSR is no longer a threat is to be dangerously misinformed. In spite of the diminished threat of a conventional Soviet attack on Europe, the USSR retains the strategic military capability to do so. Consequently, the United States must still be prepared to support our allies and deter or defend against such a threat, if necessary. Additionally, the Soviets have the capability to extend their influence into unstable regions of the world through surrogate nations that are increasingly armed with sophisticated weapons.

Our own doctrine has identified several likely regions of contention in the world. They are central Europe and the Soviet Union, the Mideast, Latin America and the Caribbean, Asia, and Africa.

EUROPE

As I hope you are aware, there will be a massive reorganization and reduction of both Western and Soviet force structures once the Conventional Forces Europe (CFE) agreement is implemented — NATO, in fact, could be forced to discard as many as 10,000 tanks under the upcoming conventional forces treaty, with the Soviet Union affected similarly. The total quantity of armor in the region is now about 80,000 vehicles. Logically, most of

"Mikhail Gorbachev qualitatively improved Soviet offensive capabilities through continued ground force modernization during his first four years as head of the Soviet Union."



Soviet T-80 MBT - A new standard.

the vehicles affected by the treaty will find their way to many other countries of the world through arms sales. Despite the apparent diminished risk of a conventional war in central Europe, however, the Soviets continue to represent the single largest threat to the region. Even without its Warsaw Pact allies, the Soviet Union still has the preponderant military force within striking range of western Europe.

Nevertheless, while the Soviet Union and parts of the Eastern Bloc move toward reform and closer economic ties to the West, rapid, radical change associated with the ethnic and national rivalries of eastern Europe, held back for 50 years, as well as the issue of German reunification, could prove a catalyst for instability and violence. Mikhail Gorbachev qualitatively improved Soviet offensive capabilities through continued ground force modernization during his first four years as head of the Soviet Union.

These improvements have included the introduction of self-propelled artillery, multiple rocket launchers, and infantry fighting vehicles. Based on these actions, as well as historical precedent, it is clear that the Soviet Union will most likely continue modernization efforts and maintain the technological capability to produce advanced weapons systems to protect its national security. Moreover, a Soviet army made smaller by treaty, may prove no less capable and may even be improved through streamlining.

LATIN AMERICA

Forces in Latin America and the Caribbean are characterized by isolated terrorists, organized guerrilla units, and/or hostile organized government forces. Stability in Latin America is threatened by serious economic, social, and political problems in some areas, and by insurgencies and terrorists fueled by drug money. The Cubans — and indirectly, the Soviet Union — also represent a significant threat to the stability of the region. In the past, the Cubans have tried to undermine U.S. influence by encouraging Marxist-Leninist regimes, supporting communist insurgencies — as in El Salvador — and by attempting to increase political and military ties. Castro has hoped, by these efforts, to supplant the United States as the predominant military and political power in Latin America. Armor is still very much part of the equation, with over 3,000 tanks in the region. Additionally, the Soviets are also aggressively seeking new clients for military arms sales to expand access to the region and obtain hard currency. In this region, the population tends to be concentrated in a few urban centers, many in coastal areas, with numerous small villages scattered throughout the interior. With some exceptions, the interior areas are characterized by dense rain forests and mountainous terrain. Lines of communication are limited, and are of poor quality. Climate varies, from warm and wet in lower elevations to dry and cold in Andean regions.

THE MIDDLE EAST

Probably nowhere else are vital U.S. interests as much at risk as in the Middle East. The area has long been one of the most volatile in the world, and will likely remain so in the foreseeable future. The primary U.S. interest in this region is the maintenance of open access to the petroleum resources critical to much of the Western industrialized world. Also of major concern to the United States is the preservation of the territorial integrity and independence of the state of Israel. Centuries of religious and territorial disputes have become even more dangerous today when carried out by expansionist states and fanatical regimes armed with increasingly sophisticated weapons. The continued power vacuum in Lebanon, the unending hostility between opposing Islamic factions, and the growing military imbalance among countries of the Gulf region all represent examples of tensions that have the potential to develop into a multinational conflict ultimately involving the United States. The acquisition of a chemical or nuclear capability will also provide a potentially more lethal dimension to any conflict in the region, and as illustrated during the Iran-Iraq War, some nations are prepared to go beyond the deterrent effect of these weapons and actually use them against their enemies. With the strategic oil reserves of the region remaining significant into the next century, security in the area is of considerable Western concern. For-



The British encountered armor, even in the Falklands.

"A significant factor of the regional threat, however, is that now forces ranging from small bands of insurgents to large, well-organized armies are armed with a tremendous diversity of some of the most up-to-date weapons."

ces in the Mideast are characterized by relatively modern armored and mechanized forces using both Soviet and Western tactics. There are currently more than 12,000 tanks in the region. In the Mideast, the population tends to be widely distributed in agricultural areas, a few major cities, and around major oil production facilities. Extensive coastlines and numerous ports provide a variety of sea approaches, and the interiors are harsh deserts with mountains and escarpments. Lines of communication are generally adequate only around major urban areas. The climate ranges from temperate to hot, and strong winds will contribute to poor visibility.

ASIA

The primary interest of the United States in Asia is its continued economic, military, and political stability. To this end, we and our allies must have unimpeded access to the various air and sea lines of communication that cross the region. We must also depend on stable allies for forward deployment or contingency bases. The primary threat to our regional interests, therefore, is Soviet naval and air power. In addition to China and the Soviet Union, however, two other nations — North Korea and Vietnam — also possess large ground forces and significant amounts of military hardware, which could potentially threaten regional stability. Forces in these regions range from small bandit-style insurgents to those that are characterized by relatively modern armored and mechanized organizations having some of the most

sophisticated weapons systems available — both indigenous and imported. Some 23,000 tanks contribute to the lethality and survivability of these forces. The population tends to be widely distributed in agricultural areas, or packed into densely overcrowded cities and urban areas. The majority of the world's population also lies in these two regions — China with 1.1 billion people, and India with 834 million, making up more than one-third of the earth's people. Climate and terrain encompass virtually any and all that you can imagine, from desert to rain forest, flood plain to the highest mountains in the world, and from warm and wet in lower elevations to dry and cold in the upper elevations.

AFRICA

The primary interest of the United States in Africa is its use in contingency operations. To respond to crises in the Middle East, we must have access to the sea lanes around Africa and the air space over the continent. The United States also has a continued interest in the strategic mineral resources of central and south Africa. Metals like titanium are critical to our advanced aircraft construction. The loss of these vital resources to a hostile power would jeopardize the strategic capabilities of the United States. Racial, ethnic, and nationalist rivalries, as well as social and demographic problems will continue to be the primary causes of regional conflict in Africa. The Soviets, logically, are also interested in the natural resources and

strategic locations within the African region. Additionally, the sale of weapons to African nations for hard currency, augmenting the 7,000 tanks currently on hand, will cause what were once considered small, isolated wars to become more lethal and potentially more significant conflicts.

Critical to this discussion is an awareness that the forces and people we encounter will either win or lose the war on their home terrain. They will fight, not in a foreign land far from their families and supply lines, but for the very survival of their families and their way of life on the land upon which they were raised and trained. An intangible factor such as this can be a significant force or strength to the ultimate outcome of a battle, such as we faced in Vietnam and the Soviets in Afghanistan.

You might think there aren't many places left in the world to worry about after that, and you're probably right. Nevertheless, the threat has grown from one fairly manageable area, i.e. Europe, to literally the rest of the world.

The critical point of this whole discussion, however, is that, at the tactical and operational level, the real threat is not the region of the world in which we may have to fight, but rather the weapons systems and technologies that we will encounter. Don't get me wrong — the enemy's terrain, training, force structure, national or religious fervor, and plain guts are still tremendously important. But all things taken equally, it is the weapons system that is the

"Modified T-55s and T-62s are as lethal and survivable as some versions of the the T-72, and significantly increase the potential of these 30-40-year-old tanks."



This T-55 is retrofitted with a laser rangefinder.

most lethal and/or survivable that wins the battle in the end.

It is virtually impossible to create a force that can contend with every threat or to be able to cover every region. A significant factor of the regional threat, however, is that now forces ranging from small bands of insurgents to large, well-organized armies are armed with a tremendous diversity of some of the most up-to-date weapons available. A peasant who, five years ago, was on horseback armed with a musket and machete is now armed with a 4,000-meter, user-friendly ATGM. All he has to know is how to put the crosshairs on the target and pull the trigger.

So, how do the Soviets fit into all this? They have been the world's leading producer of military weapons systems since World War II, and the sale of their older tanks, ATGMs, artillery, and the like to their allies throughout the world has been ongoing for quite a number of years. The extent of this proliferation has only recently become significant, due to our increased awareness of the regional threat. Almost 70 percent of the tanks currently on hand in developing nations are of Soviet manufacture or design.

There is another significant aspect of arms sales worth mentioning now that our focus is on the various regions of the world and not so much on the Soviet Union. It has become quite obvious that it is not only Soviet military technology with which we need to be concerned. Military sales are a significant part of any country's military production,

and the selling of Western weapons systems is no exception. In fact, the quantity and diversity of Western systems in potentially hostile hands is just as significant, if not more so, as those of the Soviet Union. Couple that with a variety of indigenous vehicles produced by a given country, or take into account a country's modification to an imported system, and you can begin to appreciate the nature of the beast.

To put things into perspective, I want to briefly paint you a picture of the types and quantities of systems that we are talking about, and where they are located. I also want you to understand that it is not merely a matter of numbers alone - the synergism of the types of weapons systems, coupled with the varied terrain, doctrines, training, force structures, and the like, is very significant. We will no longer have the luxury of going against an enemy who is doctrinally correct (whatever that means), or one against which we can template ourselves.

Other than the United States and the Soviet Union, there are currently 25 other countries in the world with more than 1,000 tanks in their inventories - in some cases, significantly more. Granted, other than the two superpowers, most of these armored vehicles are of the older variety and in some ways are considered obsolete on today's battlefield. Nevertheless, the majority of them are still a lethal threat to many of their adversaries.

Beginning with the Soviet vehicles, you should know that factory-fresh,

50-year-old T-34s are still being offered for sale. The T-55 and the T-62, however, with their 100-mm and 115-mm main guns, respectively, make up the majority of tanks that are to be found outside of the Soviet Union. Thousands of each of these vehicles were produced, and have been the primary tank for sale by the Soviets. Obsolete by today's standards, many of these vehicles have undergone a substantial retrofit, either in the USSR prior to export or by the addition of a retrofit kit once it is delivered. This retrofit amounts to a laser rangefinder, the addition of side skirts for ATGM standoff, improved fire control, enhanced armor protection, and improved ammunition. Modified T-55s and T-62s are as lethal and survivable as some versions of the the T-72, and significantly increase the potential of these 30-40-year-old tanks.

Export models of the T-72 are showing up in ever-increasing numbers in many countries of the world. These tanks have an automatic loader, three-man crew, and a 125-mm main gun. Newer versions have a laser rangefinder, grenade launchers, and improved fire control. Several countries outside the Soviet Union produce this vehicle, including the Czech and Slovak federated republic, India, Iraq, Poland, Romania, and Yugoslavia. Over 12 versions of the T-72 exist, and it is still in production. It's probably safe to say that the standard for the regional tank threat is, or soon will be, a T-72 equivalent.

Vehicles like the T-80, with its advanced fire control and 125-mm



French AMX-13 light tanks were widely exported.

"The AMX-13 and AMX-30, with their 90-mm or 105-mm guns, are found in sufficient quantities in Saudi Arabia, Iraq, and Lebanon to be a potent threat to any adversary."

gun, are currently only in Soviet hands. However, considering their dire need for hard currency and the ongoing reduction of forces in their army, it is conceivable that the T-80 may show up on the market block one of these days. Bear in mind that the T-80 fires an ATGM through the gun tube to a range of 4000m.

The BMP infantry fighting vehicle, produced since 1967, is now in use in over 20 countries throughout the world in many different variants. Its low silhouette and onboard ATGM capability make it an extremely efficient weapons system.

Over the years, a tremendous quantity of Western armored vehicles have been sold throughout the world. Moreover, many countries that are considered a potential threat to the West, such as Iran and Libya, were in some cases receiving aid or security assistance from the United States, Great Britain, France, and West Germany in the not too distant past.

During that period of time, their military hierarchy inherited not only a lot of equipment, but also based their training, doctrine, and force structure on their host country. Keep that thought, because I want to touch on this a little later on.

Tanks produced by the United States, to include the M4, M41, M47, M48, and M60, as well as the venerable M113 armored personnel carrier, are in use throughout the world. We find the older tanks, such as the M4 with its 76-mm gun, in Paraguay, Taiwan, and Chile. The

M41 and M47, upgunned to 90-mm are lethal against a current main battle tank, at least from the side. The upgunned M48 and M60 series with a 105-mm cannon are also extremely potent adversaries, and are lethal to a range of 4000m. We find the M48 or M60 in Morocco, Tunisia, South Korea, Egypt, Iran, Jordan, and Saudi Arabia, and there is a move afoot to sell many of the M60A1s in Europe to Egypt. Currently, the M1 and M1A1 tanks are not found outside of U.S. forces' control; however there are bids from Saudi Arabia, Kuwait, Pakistan, and Egypt to purchase M1s in the future, and Egypt may even begin producing the M1.

The M113 armored personnel carrier is exported to more than 45 countries in a variety of configurations. Many of these vehicles have been significantly retrofitted with enhanced armors, reactive armor, and indigenous gun systems, such as the YPR-765 found in the Netherlands and the Philippines — sort of a mini-Bradley with a 25-mm Chain Gun — so that the M113's potential is still around after more than 30 years of production.

One interesting factor for our soldiers fighting our own tanks, which we supposedly didn't have to worry about before, is the target identification problem, especially in a close-in battle. Conceivably, with everyone in an identical or very similar looking tank, things could get a bit dicey, especially in the confusion and chaos of battle and the speed with which it will be fought.

Both the British Centurion and Chieftain are found in Kuwait, Iran, and Israel. Bear in mind that these countries had ties with Great Britain in the past, either as a colony or for security assistance.

The 35-year-old Centurion would be obsolete on today's battlefield. The Chieftain, which used to be the main battle tank of the UK and is still in its service, has a 105-mm cannon, weighs 54 tons, and is quite a bit more survivable than the Centurion. Both of these tanks are fairly big and slow. The British also produce and export the small Scorpion light tank and Saracen armored personnel carrier, which have variants associated with reconnaissance and light forces.

France produces and sells the AMX-series tank, to include the AMX-13 and AMX-30. These tanks are smaller than most others, weighing in at about 15 and 37 tons respectively. While not as lethal as a T72, the AMX-13 and AMX-30, with their 90-mm or 105-mm guns, are found in sufficient quantities in Saudi Arabia, Iraq, and Lebanon to be a potent threat to any adversary.

Germany has sold their Leopard-series tank and Jagdpanzer armored personnel carriers to other nations on a limited basis. Any force with these systems is lethal out to 4000 meters. Outside of Germany, the Leopard can be found in Switzerland, Belgium, and Denmark, as well as in Greece and Turkey.

Several other countries in the world produce and export their own

tanks. Brazil has the largest and best-equipped forces in South America and, with the help of other nations, has its own armament industry with the potential to become a world arms exporter. The Brazilian Osorio is a mini-version of the M1, with a 120-mm cannon, and is currently for sale. The Republic of Korea produces the ROKIT, another mini-M1 clone. And China long has been a major exporter of arms, although only recently it has come into its own in armored technology with the T69.

There are also countries, such as Iraq and Israel, which have successfully modified older tanks to suit their purposes without having to produce a totally new vehicle. Iraq has added a 125-mm cannon with automatic loader to the old Soviet T55, and has added enhanced armor and fire control improvements as well.

In recent years, the proliferation of both Western and Soviet antitank guided missiles in the Third World has given those forces a cost-effective, accurate, long-range, user-friendly weapons system that can destroy just about whatever it hits with minimum effort. Most ATGMs generically have an effective range of more than 3000m with a 90-percent probability of hit.

Currently, the Soviets export five different types of ATGMs to countries such as India, Iraq, Syria, and Cuba. Western systems, such as the Milan and HOT, the Euromissile effort of France and West Germany, and the U.S. TOW are in the hands of Syria, Morocco, Iraq, and Israel, to name a few. These missiles are found mounted on the ground, in vehicles, and on helicopters, and for their range and ac-

curacy are possibly the most potent tactical threat that an armored force may face.

SUMMARY

In summary, the real threat is not so much where or who we will fight as it is what we will fight. The international situation is complicated by the proliferation of modern, high-technology weaponry in the Third World. Certainly the most alarming aspect of this proliferation is the growing number of nations in position to acquire weapons of mass destruction — chemical, biological, and even nuclear. Even in the absence of such weapons, impressive conventional arsenals possessed by Third World nations pose an immediate concern.

The armored forces that we may encounter in the foreseeable future will range from antiquated T34s and M4s to tanks equivalent to the T72 in survivability and lethality. Realize that target identification will also be a problem with the combination of both Western and Soviet vehicles on the battlefield.

Technologies available to most countries will range from antiquated systems to the most modern available for the cost. Reactive armor currently defeats all known chemical energy unitary shaped charges, and can be added to any tank. Improvements in ammunition, fire control, and gun systems are an integral part of the modernization of older systems, such as the T55 and T62. Antitank guided missiles are a lethal and inexpensive counter to armor and will undoubtedly prove to be a significant factor in future war. Technologically, countries of the Third World are as capable to

the degree that their economies and allies will allow.

Clearly, there exists the possibility of U.S. military involvement in several regions of the world. The most volatile regions also involve some of our most crucial interests. Many potential adversaries in these regions have significant military forces, including large quantities of armor, artillery, or huge numbers of ground forces. Any U.S. armed intervention must have the capability to successfully combat these forces.

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Light Cavalry in the 10th Mountain Division

by Captain Jeff Witsken and Captain Lee MacTaggart

As the armor force examines the use of HMMWVs in its scout platoons, the cavalry troops of the light infantry divisions (LID) are refining tactics and doctrine incorporating HMMWVs into the unique structure and missions of LIDs. The light cavalry troops play the same role as their counterparts in other divisional cavalry squadrons, yet, because of the unique demands of Low-Intensity Conflict (LIC) and the structure of units within the division, the LID cavalry troops must evaluate tactics and organizations against both insurgent forces and mobile, armor-protected formations.

The LID was structured for rapid deployment and fighting in a LIC scenario. The unpredictable nature of future conflict, combined with

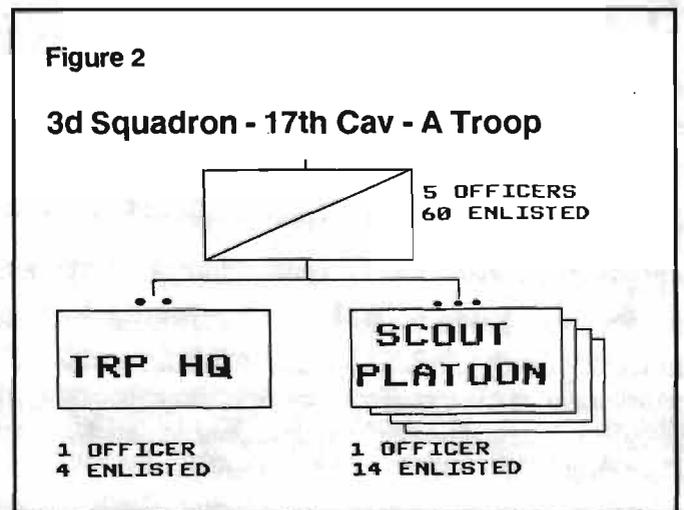
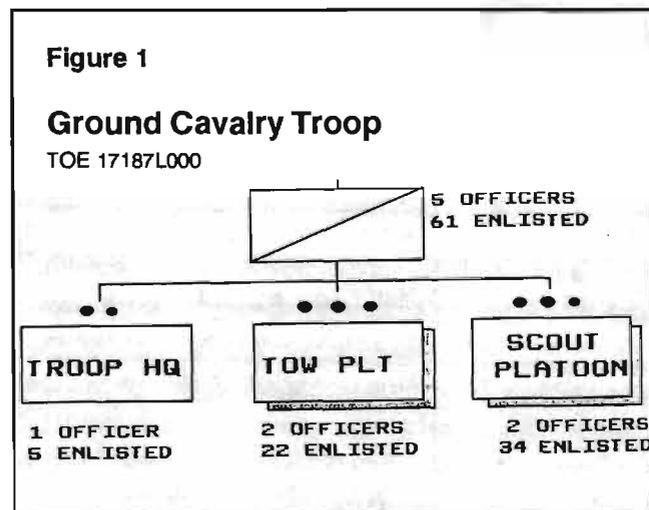
the rapid modernization of the armies of developing countries, has caused the Army to examine the use of light infantry in mid- and high-intensity conflict. The LID can handle better equipped, organized enemy forces, if properly reinforced and task-organized.

Regardless of the type of enemy, light infantry attempts to operate against the enemy in a widely dispersed, highly mobile fashion during limited-visibility periods in rough terrain. This structure and employment has caused the light cavalry to organize and train for its missions under conditions and standards far different from those faced by armored cavalry units.

The wide variety of missions of the five LIDs causes a varied approach

to mission accomplishment in each division. We will examine the current structure and mission profile of light cavalry within the 10th Mountain Division (Light Infantry), stationed at Fort Drum, New York, to describe one direction in which light cavalry is moving.

Table of Organization and Equipment 17187L000 sets the organization of the light cavalry troop into a troop headquarters, two scout platoons, and two TOW platoons (see figure 1). The specific MTOE used by the 3-17 Cavalry, 10th Mountain Division has been further modified into an organization of a troop headquarters and four scout platoons (see figure 2). Each scout platoon is a hybrid scout/TOW HMMWV mix of five vehicles (see figure 3). Internal equipment trans-



fers within the squadron have given all members of the scout platoon an M16 rifle or M203; improving the dismounted firepower of the scouts.

Platoon and troop formations and movement techniques are the same as those used by armored cavalry. Modifications were made to allow the four-platoon structure of the troop and the five-vehicle structure of the platoons, but these changes do not alter the function of the movement techniques or the formations.

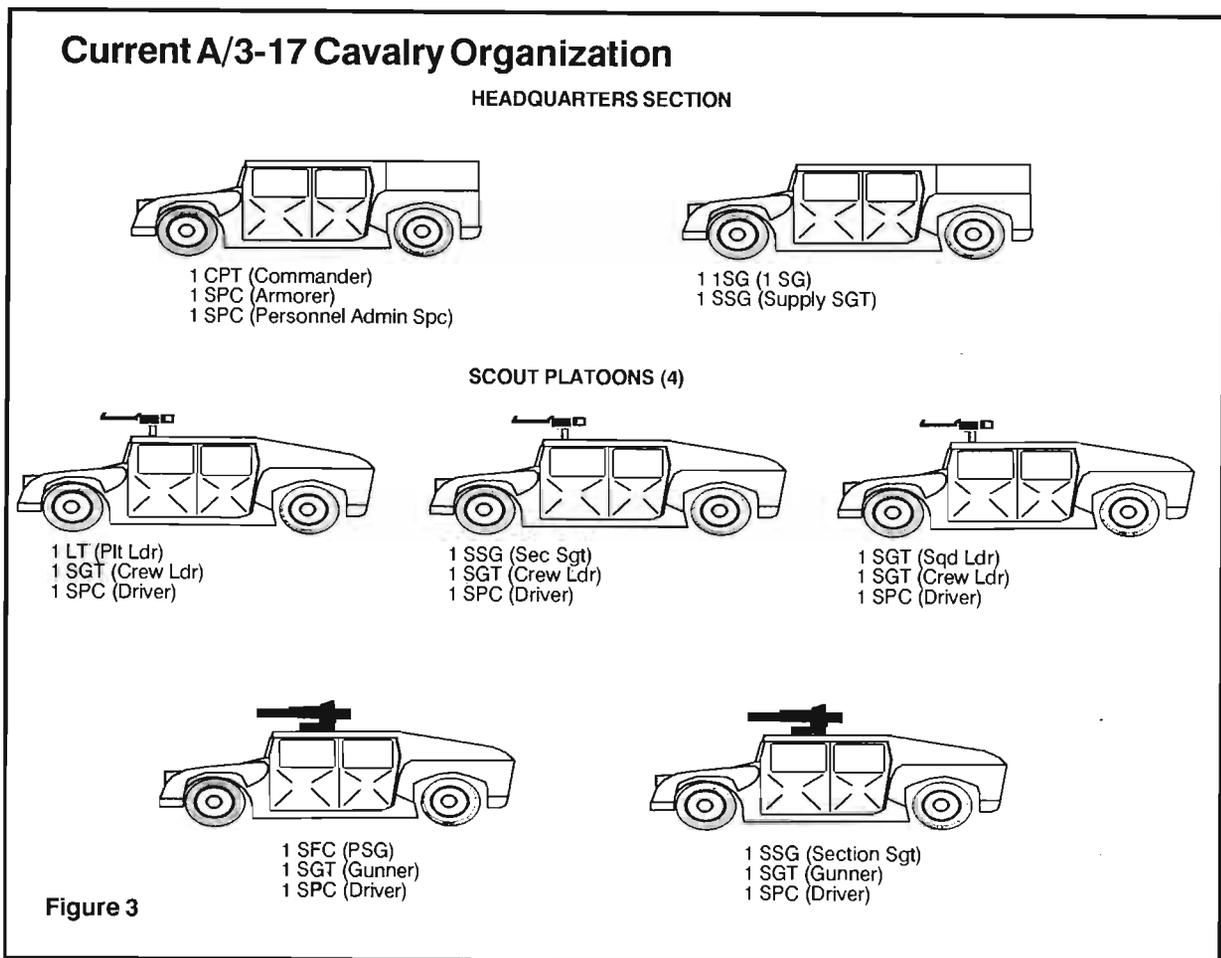
With the changing political climate in Europe, conventional conflict involving heavy forces becomes less likely. However, turmoil is still a distinct possibility in other parts of the

world. Because this turmoil may be LIC, or demand immediate deployment, an LID will be a prime candidate as the Army's participant. Therefore, a very brief primer on LIC is in order.

The enemy in a LIC scenario will probably be a politically-organized insurgency using long-term operations and widespread hit-and-run tactics to further its goals within the country. Avoiding contact unless forced to, or under favorable odds, they will often be indistinguishable from the general population. Most operations will only occasionally involve combat, even over an extended period of time. Ambushes, mines, and booby traps represent the most frequent forms of contact.

The follow-up operations during Operation JUST CAUSE are representative of the actions that will occur in a LIC scenario. The challenge is to find this enemy without suffering excessive casualties from his tactics.

This challenge will be greater with rules of engagement that restrict the scouts' ability to use firepower or maneuver. These rules are meant to avoid unnecessary civilian casualties, yet scouts must understand that these same rules may place them at great risk. For example, LIC scenarios often forbid laying friendly minefields (to avoid civilian casualties), or require positive identification before returning fire. Contact with the local population might



be forbidden. Light cavalry must adopt new tactics that minimize the effect of prescribed rules of engagement. 3-17 Cavalry has operated under constraints similar to those above during training exercises, developing and modifying operating techniques to meet the situation.

The troop operates primarily in its mounted role conducting reconnaissance and screening for the division, of which area reconnaissance is the predominant mission for the light cavalry. Past operations have stressed dismounted patrols at night to accomplish reconnaissance, inserted and extracted by a combination of foot, HMMWVs, and helicopters. These missions have included maintaining continuous surveillance of the objective after completion of the area reconnaissance. The reconnaissance is usually oriented toward obtaining detailed terrain information, and can include sustained surveillance to determine evidence or patterns of enemy activity.

Zone reconnaissance missions use the same methods and tactics outlined in FMs 17-95 and 17-98, with an emphasis on slow, extremely detailed reconnaissance, oriented mainly on potential or suspected enemy positions, assembly areas, and cache sites. Detailed knowledge of the terrain in the zone is more important than enemy information.

Route reconnaissance is also conducted conventionally, although many routes reconned in low intensity situations are more primitive than found in more developed countries. The troop may find itself repeatedly reconning the same route to ensure mines or ambushes have not been placed along the route. Again, the reconnaissance ef-

fort is on terrain and suspected or potential enemy positions.

Screening operations present special challenges to the cavalry troop, which must prevent dismounted infiltration of the screen line and avoid detection of its observation posts by dismounted forces. This is done through continuous observation and aggressive patrolling, which places great strain on a 15-man platoon to operate at least two observation posts. The need to maintain the screen usually prevents any effective sustainment operations because the scouts are all patrolling or manning the observation posts/night observation devices. The need for noise discipline often requires that vehicles be left several hundred meters behind the actual line of observation posts. The commander must often compensate for this by leaving one platoon out of the initial screen line and establishing a rotation to allow each platoon to rest/sustain while it is off the screen for a few hours.

To maintain contact presents a real challenge to the troop. Tracking skills are often needed to maintain contact with a dismounted enemy. The close terrain and poor visibility inherent to LID operations makes it more likely that the screening force will be discovered. Close engagements are very likely as the troop tries to maintain contact.

The troop has executed guard or cover missions, usually as part of economy of force operations. These missions are often executed by the troop and squadron without other augmentation. As a result, the troop often finds itself conducting high-risk attacks or defending in an attempt to execute its mission. These missions are often successful against primarily dismounted forces,

because the troop and squadron can use their superior mobility to frustrate the enemy.

There are several unique considerations to combined arms operations in the LID. Artillery consists primarily of 105-mm howitzers with a 12-km range, resulting in cavalry operations outside the range of available supporting artillery. Infantry, engineers, or GSRs provided to the troop are dismounted, so the troop commander must accept a slower pace of operations or ferry his attachments around the battlefield in available vehicles.

The greatest advantage of the light cavalry troop is its flexibility. The troop's ability to perform its missions mounted, dismounted, or with airmobility provides the division reconnaissance or security regardless of terrain or weather. When needed, it can bolster the maneuver brigades for certain missions. It routinely provides dismounted patrols or reconnaissance and surveillance teams inserted by helicopter to check out areas of interest to the division. The maneuver brigades can be very interested in the TOW firepower of the troop to stiffen their anti-armor defenses. If needed, the troop engages in close combat to accomplish its attack or defense missions.

The cavalry troop is the only 100 percent mobile ground maneuver force in the division. Its mobility allows execution of missions at a greater tempo and rapid maneuver against opponents. This mobility also makes the cavalry troop the force to reach for in an emergency.

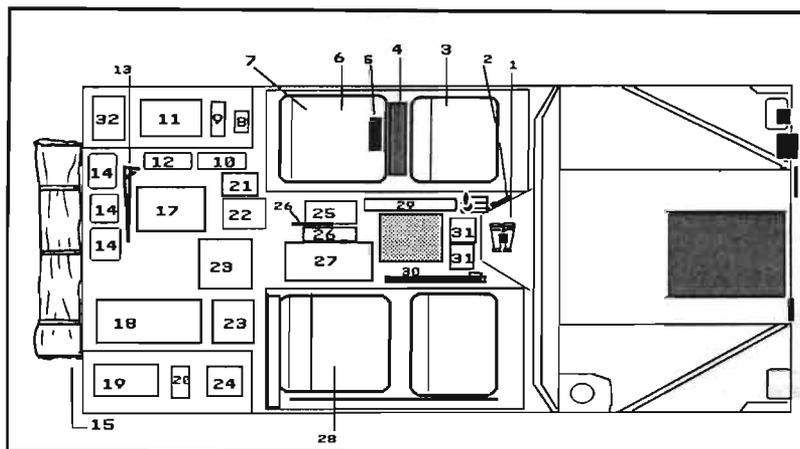
The troop's mobility compensates for shortcomings in firepower and armor protection.

Figure 4 (top) and Figure 5 (bottom).

HMMWV STOWAGE: TOW AND SCOUT VEHICLES

SCOUT VEHICLES

1. BINOCULARS (ON TOP OF RADIO)
2. FLASHLIGHT
3. VEHICLE BII (UNDER SEAT)
4. M13 DECON APPARATUS
5. PRC-77
6. THREE M256 KITS, ONE M9 PAPER PACK, ONE NBC MARKING KIT (UNDER SEAT)
7. CREW RUCKS AND BEDROLLS (ON SEAT)
8. CE-11 W/DR-8 REEL
9. TA-1 (ALSO TA-312 ON #1 VEHICLE)
10. WATER CAN
11. DEMO KIT W/50 NON-ELEC CAPS (# 2 & 3 VEHICLES)
12. DIESEL CAN
13. M60 TRIPOD & T&E
14. NBC OVERGARMENTS, BOOTIES, GLOVES
15. CAMO NET AND SUPPORT SYSTEM
16. NOT USED
17. MINES: 2 X M16A1, M21, M18A1



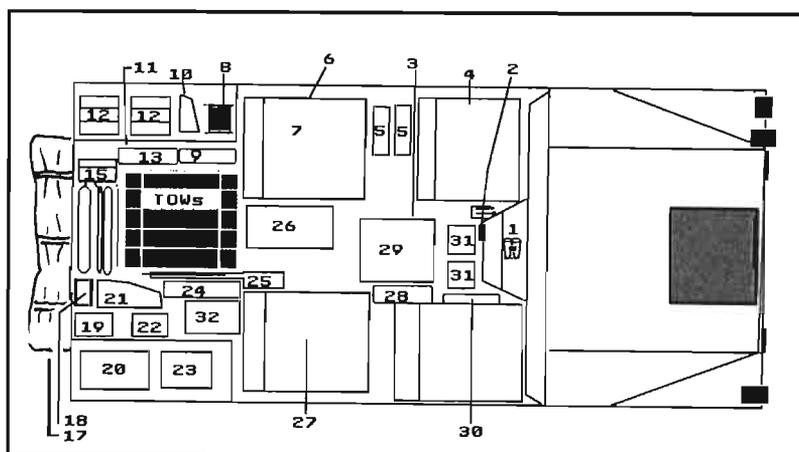
- | | |
|--------------------------------------|--|
| 18. MINE DET AN/PSS-11 (#1 VEH ONLY) | 26. 1680 RDS 5.56-MM AMMO |
| 19. AN/PVS-2 | 27. LAWS (4 EA) |
| 20. 840 RDS 5.56-MM AMMO | 28. HAND GRENADES, PYROTECHNICS, MISC. |
| 21. 1600 RDS 7.62-MM AMMO | 29. SPARE BBL BAG |
| 22. C4, DETCORD, FUZES | 30. M60 MOUNT & PINTLE |
| 23. M8A1 CHEM ALARM (#1 VEH) | 31. AN/PVS-5 (2 EA) |
| 24. 44 RDS 40-MM AMMO | 32. TA-312 |
| 25. 1600 RDS 7.62-MM AMMO | |

TOW VEHICLES

1. BINOCULARS
2. FLASHLIGHT
3. MGS
4. VEHICLE BII (UNDER SEAT)
5. MINIGUN AMMO CAN (MANUALS, GTA, SUPPLIES)
6. THREE M256 KITS, M9 PAPER PACK, NBC MARKING KIT
7. CREW RUCKS AND BEDROLLS
8. CE-11 W/DR-8 REEL
9. WATER CAN
10. TA-1 (ALSO TA-312 ON #1 VEH)
11. MGS BATTERY ASSY (2 EA).
12. 1600 RDS 7.62-MM AMMO; 1680 RDS 5.56-MM AMMO
13. DIESEL CAN
14. NBC GEAR
15. TOW TRIPOD
16. NOT USED
17. CAMO SCREEN AND SUPPORT SYSTEM
18. M13 DECON APPARATUS
19. NIGHT SIGHT BATTERY
20. NIGHT SIGHT BATTERY POWER CONDITIONER

- | | |
|--|---------------------------|
| 21. OPTICAL SIGHT | 28. TRAVERSING UNIT |
| 22. BORESIGHT COLLIMATOR | 29. NOT USED |
| 23. TOW NIGHT VISION SIGHT | 30. M60 MOUNT & PINTLE |
| 24. M60 SPARE BBL BAG | 31. AN/PVS-5 (2 EA.) |
| 25. M60 MG WHEN NOT MOUNTED | 32. 1600 RDS 7.62-MM AMMO |
| 26. AN/PVS-2 | |
| 27. HAND GRENADES, PYROTECHNICS, MISC. | |

NOTE: TOW LAUNCH TUBE IS STRAPPED TO CARGO HATCH ROOF



Even with those shortcomings, the troop presents a potent combination of firepower compared to other elements of the LID. It has more M60 machine guns than a LID battalion, and has as many TOW missile launchers as two LID battalions. This comparative wealth of firepower helps the widely spread elements of the troop complete their missions, but it also makes the troop a prime candidate for "augmenting" maneuver brigades with greater firepower.

As noted before, there is a great emphasis on airmobility in the 10th Mountain Division. The amount of training conducted in rappelling and air assault missions gives the division much of the capability that the old "blues platoon" gave to the "H" series division. This flexibility and extra capability help overcome terrain that the HMMWV cannot negotiate. The drawback is the troop has to park most of its vehicles to provide a sizable air-mobile force.

One light cavalry troop is inadequate for sustained division-level operations. The reconnaissance squadron has only one cavalry troop with a total strength of 65 personnel. Even in the reduced sector that a LID would occupy, one cavalry troop cannot cover the entire area. Close terrain only increases the problem. With 15-man platoons, it is difficult to execute missions around the clock. The troop is the only all-weather, day-and-night force available to the squadron, and must bear the burden of accomplishing the entire squadron's mission when conditions prevent air cavalry employment.

Command and control present a unique challenge, with no executive officer authorized, the troop commander must delegate duties to the

senior platoon leader when needed. The commander is often deluged with spot reports and must choose between following the battle or communicating with squadron, and the senior platoon leader is unable to monitor the squadron, troop and platoon nets simultaneously. An XO who could assume the duties of the commander would be an enhancement.

Combat service support presents a continuous challenge. The troop headquarters section cannot divide into separate troop trains and field trains, forcing the troop commander to manage the trains, while the first sergeant pushes supplies up from the rear. This problem gets worse with the meager CSS assets of the squadron, brigade, and division. The troop must often take resupply into its own hands and carry as much as possible to avoid shortfalls later. Figures 4 and 5 show the current load plans used by the troop for most missions.

If any future force structure changes are to be made to the light cavalry, there are many changes to consider to improve the combat performance of the troop. Four-man scout crews would give the troop an adequate ability to conduct dismounted patrols and to conduct sustained operations. The troop HQ section needs an XO and separate vehicles for the CO, XO, first sergeant, and supply sergeant. Consideration should be made to adding MK-19 grenade launchers, mortars, and snipers.

The troop has no mortar section or FIST assigned, so there must be constant training on call-for-fire procedures, and special coordination must be made for fire support channels.

The squadron needs a second ground troop to better conduct

operations across the division sector and to improve the squadron's 24-hour reconnaissance capability. The squadron could also use the addition of its own support platoon, because it rarely operates with the aviation brigade.

The light cavalry performs the same missions as other cavalry units, yet accomplishes its missions under different conditions, using modified operations and tactics. Interaction with combined arms remains vital, considering the limited protection and sustainability of the troop. Despite all the problems noted above, the troop is a valuable asset to the division, given its mobility and flexibility.

In the 10th Mountain Division, cavalry upholds its tradition of being the eyes and ears of the division commander.

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Captain Lee MacTaggart, a 1982 graduate of the University of Georgia, has served as a platoon leader, troop XO, and BMO. He is currently assigned as assistant S3, 27th Brigade (NYARNG), 10th Mountain Division (LI) ROUNDOUT.

120-mm Tank Gun System Safety

by Directorate of Total Armor Force Readiness

In the January-February 1990 issue of *ARMOR*, two articles addressed the safety of 120-mm ammunition for the M1A1 tank.¹ Both articles brought out important points and demonstrated genuine concern about ammunition safety, but in the context of the entire 120-mm gun system, ammunition is not the only fire safety issue. The gun itself is an important concern.

As is true of ammunition, if soldiers do not check and maintain the various components of the 120-mm gun, it can also become a potential fire hazard. Good maintenance and proper training are the keys to maintain confidence in the 120-mm gun as a safe system.

Since 1985, when the first M1A1 entered the inventory, there have been three ammunition fires or premature ignition of the round before, during, and after chambering. In two of these fires, three crewmen were killed. In addition, there have been 18 flarebacks (a ball of flaming gases that escape from the breech as a case base is ejected). Flarebacks have not been fatal.

The Armor Center is committed to develop well-trained soldiers, NCOs, and officers to man the M1A1. In light of recent safety concerns about the gun system, we have attacked the issue and incorporated our lessons learned into training and products exported to the field. What follows is a look at our maintenance and training concerns, and what we are doing to resolve them.

Attention to the following components of the gun is essential if the system is to remain safe:

- The breech of the gun must be properly assembled and cleaned. Dirty or broken firing pins, operating cams improperly adjusted (the operating cam must set as slow as is practical and still allow proper functioning), stub base deflector assembly not aligned, and carbon build-up in the chamber have all been cited in accident investigations.

- The bore evacuator on the 120-mm gun must be properly maintained. Missing, pinched, or unserviceable bore evacuator seals have been linked to system fires, including the most recent fatal ammunition fire.³ There is still some confusion about the seals. The blue seal (5330-12-178-0030) is good but must be replaced when servicing the bore evacuator. Replace it with a new blue seal or a new black seal (5330-01-280-6787). The black seal is reusable if it is still serviceable, in accordance with TM 9-2350-264-10 (Change 10). The -20 states that all bore evacuator seals will be replaced every six months during semiannual services. Crews must take care to avoid pinching the seal during installation.

- The stub base catcher assembly is also a key safety item associated with the gun. Soldiers say it gets in the way and is too flimsy, but its absence was the key factor in an ammunition fire that killed two crewmen.⁴ A superheated (700°F) stub base ricocheting around the fighting compartment is an accident waiting to happen.

As mentioned in the ammunition articles, the combustible canister of the 120-mm round is susceptible to

damage from moisture and rough handling.

- The combustible cartridge cases will absorb moisture if stacked unprotected in inclement weather or in wet interior ammo storage bustle racks (current environmental seals are not adequate; new seam welds are already being incorporated in newer tanks and tanks undergoing rebuild).

- The cartridges will swell (making loading difficult), the propellant combustion may degrade (possibly leaving burning residue in the chamber), and the structural integrity of the round may be compromised (separation of the stub base from the cartridge, for example). Even when not wet, the cartridges can be damaged during uploading and downloading at the unit level or at the ASPs.

- Commanders must stress inspection and turn-in policies at all levels. Perceptions that soldiers have to shoot damaged ammunition or buy it are misperceptions and must be addressed. As one report explains, "...soldiers are being told that they will be held pecuniarily liable for damaged rounds. There are indications that crew concern over liability for damaged ammunition may have led to damaged rounds being fired."⁵

- Loaders can damage rounds if the stub base deflector assembly is not properly aligned. This causes scratches on the casing, which can have a cumulative effect on rounds that are repeatedly chambered but not fired.

- The loader must also check the serviceability of the ammo racks.

Burrs on the tubes may scratch the casings.

We must train soldiers to properly operate and maintain the system. Crews must be aware of the safety concerns, which are unique to the 120-mm gun system. Crews must know how to properly upload and download 120-mm ammunition. They must know what to look for when inspecting ammunition. Crews must practice misfire procedures and crew evacuation drills. Crews must train in the proper uniform (NOMEX or BDUs with sleeves down, collars buttoned, black gloves on). The Armor School and major support commands are working to help you train properly.

● At the Armor School, we have reviewed all 19K/SC12-related courses to ensure that M1A1 safety-specific tasks are covered. This review included the Tank Commander Certification Course (TCCC) and the Pre-Command Course (PCC). The Weapons Department, the Directorate of Combat Development (DCD), and TRADOC System Manager-Tank (TSM-T) are coordinating with Army Materiel Command (AMC) on ammunition testing and safety developments. A series of ammunition tests has so far attributed the most recent fatal ammunition fire to a damaged cartridge contacting burning residue.⁶ The last test in this series is scheduled for completion on 22 June.

● The Weapons Department developed a film titled "Ammunition Fires and Crew Evacuation Procedures" (PIN# 708847/TVT 17-141), and sent it to the field in early April. This 17-minute film details safety precautions specific to the 120-mm gun and ammunition, including ammunition inspection criteria. It also provides step-by-step crew evacuation procedures.

● Tank Automotive Command has produced Change 10 to the M1A1 -10 TM. Advance copies of this document went to the field in May. Among other tasks, this change highlights misfire procedures, ammunition inspection criteria, and bore evacuator maintenance. PM Abrams is developing a new gunner's seat, and AMCCOM is developing a gunner's emergency air source.

● Two important changes have resulted from this ongoing review. The tank commander hatch must be open for all M1A1 gunnery (a short-term fix until a TC hatch MWO goes into effect).⁷ The waiting time for a misfire is now 15 minutes instead of 30 minutes (30 minutes was the initial change from the two-minute waiting period).⁸ A third change, that a crew has to fire any round it chambers, is still in effect pending the results of the last ammunition test.⁹

At the unit level, the chain of command must ensure that changes to TM 9-2350-264-10-1/2/3 (changes 1 through 10) get to the crews. A first shipment of advance copies of Change 10 to the -10 did not make it to the crews, according to a telephonic survey of 27 units in the field conducted by the Directorate of Total Armor Force Readiness, 16-21 May 90. On a more positive note, the same survey revealed that safety messages are getting to the crews and that units are conducting crew evacuation drills on a regular basis. Finally, with regard to training, we must break the habit of loaders holding a second round while the first round is chambered. A loose stub base did strike a second round that a loader was holding and caused the previously mentioned fire that claimed the lives of the gunner and tank commander.¹⁰

The M1A1 is a great tank. Like all pieces of equipment, however, it has

to be maintained and operated properly to be safe and effective. The M1A1 120-mm gun system is no different. Units in the field train hard. With this fast-paced operational tempo must come an increased diligence for the oversights and shortcuts that can compromise the gun system and lead to potential disaster. Do not take the gun system for granted. Take care of it, and it will take care of you!

Notes

¹Koehler, Charles, CPT, "120-mm Tank Main Gun Ammunition: An Accident Waiting to Happen?," ARMOR, January-February 1990, pp. 7-9. And "Directorate of Combat Developments Comments on 120-mm Tank Main Gun Ammunition: An Accident Waiting to Happen?," ARMOR, January-February 1990, pp. 10-12.

²Directorate of Maintenance, Weapons System Matrix Management Division, AMCCOM, Safety Statistics Summary as of 2Q FY 90, April 1990, (unpublished raw data).

³AMCCOM MSG, 152230Z Dec 89, subject: M1A1 Tank and 120-mm Ammunition Firing Inspection Precautions.

⁴Dowalgo, J., Root Cause Analysis, Tank Fire Problem, M1A1 Main Battle Tank, (Special Publication ARASM-SP-88003), Picatinny Arsenal, NJ: U.S. Army Armament Research, Development and Engineering Center, February 1989, p. 1.

⁵Ibid., p. 7.

⁶AMCCOM MSG, 152230Z Dec 89.

⁷Ibid.

⁸TM 9-2350-264-10-1/2/3, Ch. 10, Operator's Manual Tank, Combat, Full-Tracked: 120-mm Gun, M1A1, Washington, DC: 30 December 1985, p. 2-268.

⁹AMCCOM MSG, 16 Mar 90, subject: Tank Ammunition Fire.

¹⁰Dowalgo, p. 7.

The Directorate of Total Armor Force Readiness (DTAFR) is the proponent for TAF safety. We will include safety articles in ARMOR on a regular basis. We can be reached at AV 464-TANK (24 hr. recording) or at AV 464-7752/3446/7114. THINK SAFETY!

The Abuse of Paragraph 3A

or, What Commander's Concept Is Not

by Major Scott Stephenson

The Problem

It is midnight in the Valley of Death. The tank company commander gathers his key leaders. It is time to issue an operations order. One by one, the lieutenants and sergeants climb through the back door of the company FIST track and jockey for space in the cramped confines of the M113. They are tired, for it is Day 6 of a tough NTC rotation. Nonetheless, they are attentive because they know the task force has a difficult mission ahead of it. From a WARNO they already know the task force has been ordered to attack at 0500 the next morning to seize a small, but militarily significant terrain feature called Hill 466. The tank company is to play a key role in the attack. It must provide the suppressive fires that will allow the remainder of the task force to maneuver onto the objective.

As expected, the company commander begins the order by reviewing the friendly and enemy situation. He speaks briefly of the task force mission and then describes the expected disposition of the OPFOR motorized rifle company defending Hill 466. He then gives the company mission statement to "attack in support of TF_____s seizure of Hill 466." The orders group scribbles furiously on its

notepads, pressed to keep up with the pace of the captain's words.

But then the captain pauses. He has reached a crucial part of the OPORD, Paragraph 3, Execution. As the initial element of Paragraph 3, he must provide his "commander's concept," otherwise known as commander's intent. The captain furrows his brow in concentration. There is silence in the track. "Gentlemen, my intent is to reach the line of departure at 0400 hours."

The orders group dutifully records these words, and the captain proceeds into other schemes of maneuver and the remainder of the operations order.

The reader, at this point, is probably shaking his head in dismay. "What an inadequate description of concept! Surely, no commander at any level would give such poor guidance to his subordinates. Certainly, no commander would shoot so wide of the mark in providing his commander's concept." If the key to the task force mission was the suppressive fires of the tank company, then clearly the commander must identify this point to his key leaders.

Alas, it is true. The vignette is drawn from an actual mission conducted at the National Training

Center and serves as an extreme example of a larger problem. This little story illustrates vividly how poorly the idea of "concept" and "commander's intent" is understood at the tactical level. And, even if the example is an extreme case, it is nonetheless representative of the difficulty that company, task force, and even brigade commanders are having in expressing their commander's concept of the operation. When we at the NTC compare what Leavenworth wants in the commander's concept paragraph with what actual commanders are writing, we see a huge disparity. We feel it is something worthy of concern, both in the school system and the field army.

Originally, the idea of "commander's intent" was developed as a command and control tool to help us implement AirLand Battle doctrine. By defining the limits of independent action and allowing our subordinates to understand the part they played in the big picture, we would improve the agility, initiative, etc., we needed to win future battles.

Then, a couple of years ago, we rolled commander's intent back into the traditional OPORD format under subparagraph 3a, concept. The name had changed, but the idea had not. The AirLand Battle commander must give us the

criteria for victory, and his vision of what victory would look like. Now he would do it in subparagraph 3a.

In the meantime, however, the field army was still trying to wrestle commander's intent to the ground — wrestling, unfortunately, with only mixed results. And now we changed the name of this elusive idea. There is little wonder the concept of "concept" is so poorly understood.

The Consequences

The result of this misunderstanding is perhaps best seen in the regimental-brigade meeting engagements conducted at the NTC. These meeting engagements are wild, freewheeling affairs taking place over hundreds of square kilometers amid great clouds of dust and smoke. Communications across the vast battlefield are tenuous at best. The keys to victory in these confused melees are aggressiveness and initiative at the platoon and company levels. Almost always, the victory goes to the OPFOR regiment.

Why? Because each leader within the regiment understands perfectly the role he must play. The well-drilled CRP commander understands he must find the enemy. The well-drilled FSE commander understands he must fix some significant portion of the enemy force. The well-drilled advance guard commander understands he must respond to the success or failure of the FSE and open the way for the main body of the regiment. The MRB commanders within the regimental main body exploit the actions of these lead elements. The key is that each subordinate leader, down to platoon level, understands how his element contributes to the accomplishment of the regimental mission. The BLUFOR, by contrast, appears slow, tentative, and

awkward in its actions. The reports of the subordinate task force commanders indicate their attention is consumed by the fights taking place on their particular fraction of the battlefield. Their communication with other task forces is minimal. Their efforts to influence the battle often show little concern for the overall requirements of brigade mission. The same is true at company level. As the brigade flounders for survival in a sea of BMPs and T-72s, it is every man for himself.

In these battles, the crucial difference between the OPFOR and BLUFOR is that the OPFOR leader knows what to do when a change in plan is required. He can adjust rapidly to a fluid situation. The BLUFOR commander is, by contrast, hard-pressed to respond correctly to changes in the situation. He must repeatedly request new guidance. The OPFOR subordinate leader understands his commander's concept and, thus, the commander's intent, while his BLUFOR counterpart does not. Almost invariably, the OPFOR commander operates well within the decision cycle of his BLUFOR counterpart. For this reason, the OPFOR is almost always the final master of the battlefield.

A Proposal

Thus far, I have suggested how poorly lower levels understand concept. In my discussion of brigade-regimental meeting engagements, I have indicated what consequences this has in our battles at the NTC. What can we do? Well, obviously, the idea of commander's concept must be carefully integrated into our manuals and the instruction at our service schools. Senior commanders must include discussion of commander's concept in their

professional development programs, and they must provide powerful, positive examples of paragraph 3a in their own orders. In the long term, we ought to be able to solve the problem.

In the short term, however, we expect to continue to see company, battalion, and brigade commanders come to the NTC unprepared to provide their subordinate leaders with well-conceived expressions of concept. Therefore, I offer some guidelines for the correct expression of commander's concept. I do not propose to rehash the definitions and guidance provided by Fort Leavenworth. Instead I would offer some tips on what commander's concept is not. In doing so, I hope at least to provide the limiting stakes for those who take aim at the problem. I offer, in the process, some examples of poor concept statements taken from actual NTC orders. (The unit designations are deleted for obvious reasons.)

What Commander's Concept (Paragraph 3a) Is NOT

● *The commander's concept is not a restatement of the scheme of maneuver or mission. This is the most common mistake we see. Commanders, at a loss about what to put in paragraph 3a, decide to summarize, in first person, the scheme of maneuver or the mission. Thus, we are told not once, but twice, in paragraph 3 how we are going to accomplish the mission. We are not told the "why." An example of this mistaken expression of concept comes from a defensive mission:*

"INTENT: I intend to use standard battalion formations and breach drills to conduct three successive breaches in order to permit us to exploit to COWBOY."

In this example, a task force commander is telling how we will get to the objective, not the purpose for going there. He has not told us the reasons the objective is important. What the commander has given us is a broad-brush and unnecessary preview to the scheme of maneuver paragraph.

● *The commander's concept is not a restrictive control measure.* This admonition is tied very closely to the one above. The concept is to provide scope for initiative. Thus, as one C&GS instructor told me, the commander must "describe how the battlefield will look when the smoke clears." He states his desired results. However, in paragraph 3a he does not tell the specifics of how we arrive at these desired results. A violation of this principle is in the following example:

"I want to allow two MRBs to attack in the north, and one MRB in the south. We will separate and disrupt the timing of the lead two MRBs with obstacles and indirect fires. The lead MRB in the north will be engaged at max range by E Co from BP50 and then destroyed by Tm C from BP30. The MRB in the south will be allowed to close to the east side of the lake and then engaged by Tm D from BP40. The third MRB in the north will be delayed by Tm E, while Tm C destroys the first. Tm C will then destroy spillover in EA FLY. I want to separate echelons and then destroy them piecemeal."

Not a bad description of scheme of maneuver, but this is not a concept statement. Too much "how" and not enough "why" and "to what end."

A dead giveaway that the commander is wandering from the realm of what is properly commander's concept is discussion of

subordinate elements. If, in paragraph 3a, we start talking about how Tm A will support Tm B, as Tm C moves to the objective, then we have strayed off course. The commander's concept must address the unit as a whole, not its component elements.

Difficulty also ensues when a commander attempts to describe the role of each battlefield operating system. We see commanders using paragraph 3a to give priority for air defense protection, to provide intent for fire support, to describe intelligence-gathering requirements. This is too much. Logically, the rest of OPORD paragraph 3 will flesh out the details for how each battlefield operating system contributes to the general goals provided in the commander's concept. Para 3A provides the focus for synchronization, and the rest of paragraph, SCHEME OF MANEUVER, FIRES, etc., describes how the battlefield operating system supports that focus.

● *The concept is not a weighty tome.* Some commanders think if they write in first person at great length, the concept will reveal itself to their subordinates. If some command guidance is good, then perhaps a lot must be better. Thus, we have seen at least one commander go on for three pages in the discussion of his intent. In such a torrent of words, the concept is lost.

The guidance from Leavenworth is to limit the concept paragraph to five or six sentences. Clearly, this is sound guidance. If the commander cannot state his concept of operation crisply and concisely in a short paragraph, then perhaps the commander should rethink the mission. Anything more than a short paragraph blunts the impact of the intent statement. Commanders must

discipline themselves to be brief and to the point.

● *The commander's concept is not an exhortation.* All too frequently commanders see the concept paragraph as an opportunity to insert a pep talk into the operations order. Take this example:

"Commander's Intent: I want to lead with two tank COs in order to mass fires on the OBJ. I want the two Mech COs to aggressively secure sites and protect engineer breaching efforts. The armor companies must violently attack with force; and Mech COs must aggressively conduct dismounted operations at obstacles and on the OBJ."

Or this one:

"Commander's Intent: TF must suppress OBJ COLT and SEAHAWK with neutralizing effects of a synchronized combat arms attack. TF must violently attack OBJ COLT..."

In these examples, the authors seem to believe that if they attach enough macho adjectives and adverbs to the concept it will inspire the unit to success. Bold, decisive language should lead to bold, decisive action. However, such language is better suited for oral expression on the back ramp of an M577. It does nothing to clarify the purpose of the mission or establish criteria for success.

Another variation of this problem is when a commander attempts to cram all the doctrinal tenets and buzzwords applicable to a mission into the concept paragraph. Take this example from a movement to contact:

"(To be successful)...we must move fast, make contact with the minimum force forward, quickly mass

combat power by fire and maneuver and maintain the momentum of the attack."

This paragraph serves as a nice reminder of the fundamentals of a movement to contact, but it is not an expression of intent. The paragraph reminds us how we should proceed but tells us none of the things we look for in a concept paragraph.

● *The concept paragraph is not devoted exclusively to the operation of the commander's own unit.* The concept paragraph should tie the operation of the unit to the mission of the higher headquarters. It should also tie the current mission to future operations. Thus, in the case of a battalion task force, the OPORD's concept paragraph should indicate how the task force's attack contributes to the success for the brigade mission. This gives company/team commanders the "big picture" they need to exploit opportunities, which might affect the whole brigade fight.

Unfortunately, more often than not, commanders focus exclusively on the mission of their particular unit. They look no further than the present operation. Here is an example from a defensive mission:

"Commander's Intent: I intend to defeat the enemy in EAs IRON, STEEL, and remnants in GOLD. We will mass the fires of three companies in EA IRON to destroy the two northern battalions. In the south, we will use CAS, artillery, and obstacles along with fires of one company. Our southern (mech) company will destroy remnants in EA GOLD. We will be successful if B, C, D co/tms destroy up to 40 enemy vehicles with no more than 25 percent losses. Co A and scouts, if necessary, destroy all remaining elements allowing no larger than a platoon to get through."

In this example, the construction is sometimes awkward, and the commander gives us more of the scheme of maneuver than we want to see in paragraph 3a. Nonetheless, he does give us his specific criteria for success and that is good. Unfortunately, nowhere does he tell us that the reason the brigade wants us to destroy the attacking enemy is to create conditions favorable to our own immediate offensive operations.

The brigade and division concept for this same operation called for the defending forces to inflict heavy losses on the attacking enemy in order to establish a favorable combat power ratio, which would allow a rapid counterattack. The brigade and division order suggest the defenders should poise themselves to exploit the destruction of the enemy in the defensive battle. However, nowhere in the task force commander's concept is there any indication of offensive intent.

To understand the higher's concept allows subordinates the opportunity to exercise initiative in ways that support the higher unit's mission. In our example, if the company/team commanders understood the concept of their higher headquarters they would have their combat power postured to exploit defensive success. They would be ready for a quick transition to the offense. Meanwhile, the task force S4 would have a resupply of fuel and ammo well forward, and the task force engineer would avoid planning FASCAM on the counterattack routes the task force is likely to use. But, if they have only the task force commander's flawed concept from the example, the subordinate leaders will be satisfied with destroying the attacking enemy short of the task force rear boundary. After stopping the enemy, they will settle back in their holes and wait for further instructions.

● *The expression of commander's concept is not limited to paragraph 3a.* The commander makes his intent known in a variety of ways. One form of expression, obviously, is operational graphics. A commander can speak volumes about the goals of an operation by where he puts his boundaries, phase lines, objectives, and other control measures. For example, the tank company commander, in our introductory vignette, could have vividly shown the role of his company in the task force attack on Hill 466 by using an appropriate symbol.

A commander may also express intent through his actions. He puts himself with the main effort. He personally surveys the ground where he wants his main engagement area. As a former commander of Operations Group used to say, "There is no purer expression of commander's intent than the commander himself personally putting in the target reference point stake at the point where he wants to mass fires to kill the enemy."

The commander also expresses his concept orally during various stages of mission preparation. He does it early on, during the estimate process, when he gives his initial guidance. This initial guidance should include the commander's first cut at an expression of concept.

By expressing this embryonic intent statement, the commander provides essential focus to the efforts of his staff. He aids synchronization by describing the desired outcome of the mission.

During the presentation of the order, the commander may amplify the content for the concept paragraph, clarify the purpose, and emphasize the key points. He will use the oral presentation to fix his intent in the minds of his subor-

dinates. And, finally, in the briefbacks and rehearsal leading to mission execution, the commander will refine the commander's concept and verify that all key players understand.

● *The commander's concept is not limited to a standard format.* Herein lies the rub. We soldiers are comfortable with guidelines and SOPs. We felt safe with the old, standard, five-paragraph operations order. It was based on a rigid, standardized format we all understood. With the addition of the concept paragraph, the doctrine-writers have given us something that does not fit a written formula.

What have they given us? They tell us what paragraph 3a is supposed to do. They recommend to write the concept in the first person and limit it to five or six sentences, but that's damn skimpy guidance. We do not have any good examples. (Which of us, when first attempting to write an OPORD or similar military document, has not fallen back on the examples provided in FM 101-1-5 or some other field manual?) No, for the most part we are left to our own devices with paragraph 3a. The commander must rely on his own style and mode of expression when giving his concept, and he must tailor the concept statement to the appropriate level of command. (A brigade commander for example, may need to address the battlefield framework in his concept and provide goals for his deep fight and rear fight. By contrast, the task force and company commander must focus their attention on the requirements of the close fight.)

● *The commander's concept is not a cure-all.* A final warning: If a unit is not adequately trained, if the scheme of maneuver is unsound, if the key staff coordination has not been made, then even the most elo-

quent expression of concept will not rescue the mission. Commander's concept is an important command and control tool, but it will not, by itself, lead us to victory.

Conclusion

Perhaps, in closing, we should return to the vignette that began this article. Our tank company commander had indicated how it was important for him to reach the line of departure at 0400. He did, indeed, reach the LD by 0400, and then sat there for an hour in sight of the enemy's OPs. The task force line of departure was 0500.

At 0500, with the sun rising over the Avawatz Mountains, the tank company crossed the LD. Its movement was initially ragged, for many of the vehicle crews had fallen asleep during the long wait at the start line. Eventually, the entire company was aroused and the approach march to Hill 466 began. Just short of direct fire range, the tank company became the target of an artillery strike. The company commander, in an effort to avoid the enemy's fire, took evasive action and was killed in a cleverly sited OPFOR minefield.

At this point, the platoon leaders were left to their own devices. Lacking sufficient guidance to exercise initiative, the lieutenants pressed on into the defensive fire sacks of the enemy motorized rifle company. Within ten minutes, the company was annihilated.

The results for the task force were very much the same. Without the tank company's supporting fires, a crucial element of the plan was missing. The task force proved incapable of adjusting to the suddenly changed circumstances of the battle. The three remaining companies attempted to maneuver against Hill

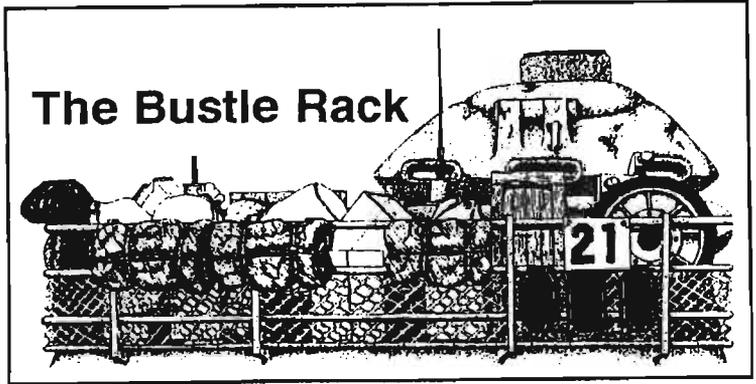
466, while the defenders, unchallenged by BLUFOR overwatching fires, shifted and massed their fires to destroy the task force.

The battle, like so many others at the NTC, demonstrated the depth and the consequences of our problem with commander's concept. Our doctrine suggests the commander's concept is an essential command and control tool in fighting AirLand Battle. I have discussed the difficulty commanders are having in understanding and using this tool. I have also indicated the potentially dire consequences that result when the concept is not understood.

Clearly, I have not given a comprehensive "how-to" lesson on how to write the concept paragraph. I haven't solved the problem, but I have suggested some of the pitfalls to avoid. In doing so, I hope I have simulated the kind of thought and discussion the problem deserves. Commander's concept has the potential to serve us well. The challenge is to understand it and discipline ourselves to use it properly.

Major Scott Stephenson is a U.S. Military Academy graduate and received his masters degree in history from Syracuse University. He has served as a platoon leader and XO in 4th Infantry Division; company commander, BMO, and S3 in 8th Infantry Division; with the ROTC department at Syracuse University; as Chief, Plans, Operations Group, and Live Fire Plans and Operations, NTC. He is currently assigned as Live Fire Task Force S3 Trainer, NTC, and is scheduled to attend the C&GS 90-91.

The Bustle Rack



Gunnery Bulletin Stresses Speed, Accuracy, Safety

The Armor School continually receives and reviews input from Active and Reserve units on the employment of armor. The Weapons Department has published a bulletin, "Tank Gunnery Lessons Learned," dated January 1990. It contains training and readiness points and a collection of techniques to help you put steel on target quicker, more effectively, and more safely.

Subjects covered are:

- Prep-To-Fire Checks (boresighting M2 machine gun)
- Prep-To-Fire Checks (firing pin, collector sponge)
- Prep-To-Fire Checks (gun tube, ammo door)
- Prep-To-Fire Checks (circuit breaker, zeroing the coax)
- Prep-To-Fire Checks (TIS, MRS, computer check, MRS)
- Prep-To-Fire Checks (batteries, hydraulics)
- Boresighting
- Armament accuracy checks, TCPC
- Commander's station, load plans, fire distribution
- Fire distribution (example of tank sectors)
- Fighting positions, sight extension, ammunition
- Battlesight, platoon gunnery
- Crew evacuation
- Flarebacks
- Ammunition

If you have not received the bulletin or if you have learned some lessons the "hard way" not covered in this bulletin, write, call, or TWX your lessons to the Weapons Department at Cdr, USAARMC, ATTN: ATSB-WP-GD, Ft. Knox, Ky. 40121-5000, (AV: 464-1246/1736/3129, commercial: 502-624-1246/1736/3129, or FAX: 502-624-5708.

Elastic Recovery Rope Kits Now Available for Bradleys

The U.S. Army has recently adopted the Allied Kinetic Energy Recovery Rope (AKERR) which enables like vehicle recovery of mired tracked vehicles. One size, a 64-mm rope, available as part of Kit NSN 4020-01-211-8382 will support Bradley Fighting Vehicles. The kit also contains hookup hardware (shackles), a storage bag and an operator manual. Authorization is Common Tables of Allowances (CTA) 50-970. Cost of each kit is \$902.00. The item manager is Commander, U.S. Army Tank-Automotive Command, ATTN: AMSTA-FHCS (Sam Hazime), Warren, Michigan 48397-5000, AUTOVON 786-5940.

Troop of 17th Cav Wins Draper Award

The annual Draper Award for cavalry leadership was awarded to Troop D, 5th Sqdn., 17th Cavalry at ceremonies in Korea. Accepting the award was CPT Steven Brown, troop commander, and 1SG Anthony L. Alfred. The award is intended to "promote, sustain, and recognize effective leadership in armor/cavalry units."

"The Draper Award means my soldiers turned out to be the best troop in the division. Their teamwork, esprit de corps, and the will to complete every task is what won the award for us," CPT Brown said.

Reunions

The 10th Armored Division Veterans Association plans to meet 30 August - 3 September at the Westin Hotel in Detroit. Further information is available from Samuel F. Murow, Box 213, Bay Port, Mich. 48720 (517-656-3551).

The 11th Armored Cavalry Veterans of Vietnam and Cambodia will hold their fifth reunion August 3-5 at Sacramento, Calif. Information is available from Alfred Pfeiffer, 2328 Admiral St., Aliquippa, Pa. 15001.

The 4th Armored Division Association meets August 30-September 2 at the Omni Hotel, Charleston, S.C. Reunion information can be obtained from Samuel A. Schenker, 1823 Shady Dr., Farrell, Pa. 16120.

The 704th Tank Destroyer Battalion holds its reunion September 13-16 at Gettysburg, Pa. Further information is available from Rodney Torbich, 166 Linmar, Aliquippa, Pa. 15001, or Walter Righton, 29 West Wilkins Lane, Plainfield, Ill. 60544.

Stivers Print Honors 37th Armor

Noted military artist Don Stivers has completed a new work depicting the 37th Tank Battalion's role in the relief of Bastogne in December 1944. Prints are available through 4-37 Armor at Fort Riley, Kan. For information, contact CPT Paluso, adjutant, 4-37 Armor, Fort Riley, Kan., 66442 (AV 856-9517/9277, Commercial 913-239-9517/9277).

Blackhorse Team Wins in Boeselager

A team of soldiers from the 11th Armored Cavalry Regiment won the Allied trophy at the biannual Boeselager Competition, held near Ebern FRG from 28 May to 1 June. The event tests reconnaissance skills, such as enemy equipment identification, night orienteering, marksmanship, mounted reconnaissance, driving and cross-country skills, aerial reconnaissance, and open water swimming. It is organized by the NATO reconnaissance section. Teams from the Bundeswehr participated in the competition but were not included in the judging.

LETTERS

Continued from Page 3

tinuing throughout the winter, U.S. infantry and engineers with British, French, and Canadian units held a lodgment some 180 miles long against everything Trotsky's Bolshevik Sixth Army, with vastly heavier artillery, could bring to bear. So grievous were the losses inflicted at Toulgas and elsewhere that mutinies were provoked in regiments of the Sixth Army. When the Allied force withdrew in the spring of 1919, it did so at its leisure, under no military pressure.

WILLIAM V. KENNEDY
COL, AUS (Ret.)
Wiscasset, Maine

Combat Mobility Vehicle

Dear Sir:

I read with great interest Kerry J. Brunner's letter in the March-April 1990 issue of *ARMOR* Magazine in reference to the conversion of M48A5s and early M60 models into a vehicle which would breach complex obstacles. The United States Army currently has plans to field a Combat Mobility Vehicle (CMV). The CMV is to be designed with the sole purpose of breaching complex obstacles. The vehicle is one of the armored vehicles that would be built on the Block 3 chassis, on which the replacement tank for the M1A1 is to be built.

The vehicle, with a crew of two, would be equipped with a mine-clearing blade, an excavation arm, and a commander's machine gun, possibly the MARK-19 40-mm grenade launcher currently in the Army inventory. The vehicle will be fielded in FY 1999, and would replace the CEVs in engineer units in USAREUR on a two-for-one basis.

Innovations have been made with the aging fleet of M48A5s and M60s on which the AVLBs and CEVs are built. Some en-

gineer units have replaced the bridge on the AVLB with two Mine Clearing Line Charges (MICLIC), to produce an Armored Vehicle Launched MICLIC (AVLM). This vehicle was used by the 16th Engineer Battalion on several division exercises at the Combined Training Center at Hohenfels, West Germany. The vehicle has undergone some experimentation at Fort Knox in 1989.

However, a basic premise of our idea is the use of an old generation of armored vehicles to breach complex obstacles for a newer, faster, more survivable generation of armored vehicles.

Some may question the wisdom of asking engineers to man obsolete, non-surviving vehicles alongside advanced tanks like the M1A1 Abrams and the Bradley Infantry Fighting Vehicle. Another problem might arise in attempting to maintain and obtain parts for a small number of older vehicles.

An engineer needs as much speed and survivability as a tanker, especially if he is going to conduct the breach.

ROBERT C. KURTZ
CPT, EN
Directorate of Training and Doctrine
U.S. Army Engineer School
Ft. Leonard Wood, Mo.

"Perfection" — Just What the Commander Ordered!

Dear Sir:

I enjoyed the article on MG John S. Wood, (The Mystery of "Tiger Jack," by BG Irzyk, January-February 1990 issue). But I was startled to see him quoted as saying to his subordinates, "I don't expect much — all I expect is perfection."

Almost 30 years ago, in the 1st Armored Division at Fort Hood, I was confronted with a severe problem of leadership. My provisional, composite honor guard company had had the daylight drills drilled out of it, but anything resembling enthusiasm was notably lacking. We were formed in rear of the headquarters building, just minutes before we were to take the field, and I was in a cold sweat for some

magical words that would bring forth the snap my men were capable of, and crown the ceremony with total success.

Just as we marched off, my frenzied brain produced a usable phrase: "Men, all that anybody expects of us this day is just — PERFECTION." The effect was electrifying. The ceremony was a brilliant success. Our highly esteemed commanding general commended us in flattering terms.

After 27 years, the memory of that event, and the implied lesson of leadership it embodies, remain as clear as yesterday. And all this time I had thought of that call to "perfection" as an original creation of my own mind!

Undoubtedly, I had picked up that phrase in earlier reading, somewhere, and filed it away in my subconscious against a time of need. When the need arose, some mechanism brought it forth. Thus are carried on, unto succeeding generations, the inspiration and example of the great leaders.

W.B. WOODRUFF, JR.
LTC, AUS, Ret.
Decatur, Texas

Requests Facts on 301st Heavy Tank Bn

Dear Sir:

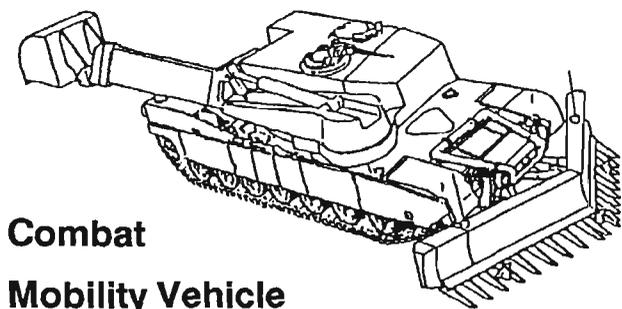
I am currently researching the activities of the 301st Heavy Tank Battalion, American Expeditionary Force during its brief service in 1918.

I do have Captain Dale Wilson's excellent volume, in addition to copies of manuscripts from the Viner Collection held at the Patton Museum.

Unfortunately, these sources leave a number of questions unanswered. I would greatly appreciate your assistance in asking your readers if they might know of other documents, maintenance records, orders, books, narratives or photographs, and their locations, which would shed more light on the service of the 301st Heavy Tank Battalion.

My goal is to build a complete list of the vehicles held by the 301st Heavy Tank Battalion, the respective tactical markings, serial numbers, and vehicle names, in addition to constructing a detailed history of the units.

KERRY J. BRUNNER
2830 N. 56th St.
Milwaukee, Wis. 53201



**Combat
Mobility Vehicle**

In Memory

General I. D. White, a key figure in the formation of the Armored Force, and former commandant of the Armor School, died June 11, 1990, at Hanover, N.H. He was 89 years old.

General White, an expert horseman, joined the 7th Cavalry Brigade at Fort Knox during the early days of the conversion from horse to mechanization. He commanded Troop A, 1st Cavalry Regiment (Mechanized) from May 1934 to August 1937.

In August 1940, he assumed command of the 2d Reconnaissance Battalion in the newly formed 2d Armored Division at Fort Benning.

He commanded the 67th Armored Regiment from June 1942 to April 1943 and took the unit from Fort Benning to French Morocco during Operation Torch.

He trained and led Combat Command B, 2d Armored Division and took it ashore at Normandy and across Europe. In January 1945, he assumed command of the 2d Armored Division at the age of 43. In April 1945, White's "Hell on Wheels" division played a major role in sealing the Ruhr Valley pocket while capturing 45,000 prisoners. Troops of the 2d Armored Division were the first Allied troops to reach the Elbe River.

General White held three major positions between WWII and the Korean War. He was commandant of the Cavalry School at Fort Riley (July '45-Dec. '46), later the Ground General School (Dec. '46-May '48); commanding general, U.S. Constabulary in Germany (May '48-Nov '50); and comman-



In 1956, General White, far right, reviews troops with Korean President Syngman Rhee.

dant, the Armored School and commanding general, Armored Center (Aug. '51 - Aug. '52).

He subsequently commanded X Corps in Korea (Aug. '52 - Sep. '53); Fourth Army, Fort Sam Houston (Sep. '53 - June '55); Army Forces, Far East and Eighth Army, Korea (July '55 - June '57); and from July 1957 until his retirement in 1961, General White was commander-in-chief, U.S. Army, Pacific.

He held dozens of U.S. and foreign awards and decorations. Among them are the Distinguished Service Medal w/OLC, Silver Star w/OLC, Legion of Merit w/two OLC, Bronze Star w/OLC, French Croix de Guerre w/palm, Belgian Croix de Guerre w/palm, Russian Order of the Red Banner, and Korean Order of Military Merit Taeguk w/gold star.

I. D. White was born the son of MG and Mrs. Daniel M. White on March 6, 1901 in Peterborough, N.H., and graduated from Norwich University with honors in 1922. He entered the Regular Army as a second lieutenant of cavalry on January 5, 1923.

General White was president of the U.S. Armor Association, 1946-'47; managed the U.S. Army Equestrian Team in the 1948 Olympics; and held a master's degree in military science from Norwich (1951), an honorary doctorate of laws from Norwich (1957); and a doctorate in military science from the University of Maryland (1958).

His wife, the former Julia Cotton of Des Moines, Iowa, whom he married in 1928, preceded him in death on July 31, 1989. There are no immediate survivors.



GENERAL I.D. WHITE

"The bias of this book will serve to help keep alive the misunderstandings between Americans and their Allies concerning just what actually happened in the great crusade of 1944-1945."

Pro-British Account of Rhineland Campaign Revives Eisenhower-Montgomery Rivalry, Claims Eisenhower, Not Monty Was Almost Fired after Battle of the Bulge

Rhineland: The Battle to End the War, by W. Denis Whitaker and Shelagh Whitaker. St. Martin's Press, New York, 1989. 422 pages. \$24.95.

The scope of this book, due to the method in which the content is presented, is beyond the size of the book. Development of the historical setting, portrayal of the battle from both sides of the line of contact, coverage of the battle and the many other factors from the highest level of command to the company in contact, and the continual critical analysis is just too much for the less than 350 pages of text.

Americans, particularly those with prior knowledge of the subject, will be negatively impressed by the anti-American tone of the book. The prologue sets the pace by blaming the Americans for what the book establishes as the major problem of Montgomery's Rhineland campaign — the American failure to control the Roer dams by the time Montgomery wanted to launch the campaign. This theme continues right on through the book to the epilogue, in which it is stated as being the basic reason for the high British and Canadian casualties in the campaign. The only favorable comments on American commanders occur when they are serving under Montgomery's command.

The allegation concerning the Roer dams does not seem to have gained the same level of importance with Montgomery as with the authors. He launched Operation VERITABLE knowing the dams had not been captured or destroyed, and knowing that flooding from the dams could delay Operation GRENADE, as it did. He also launched VERITABLE into a worsening weather picture with the knowledge that German flooding from the Rhine could delay and impede VERITABLE. Actually, the delay

may have had advantages. Reserves held opposite the Americans had to be held in place until the need to oppose VERITABLE was overwhelming. Flooding from the dams would only be temporary, and once the reserves were shifted, American success in Operation GRENADE was assured. In actual fact, what was likely the most severe British and Canadian fighting came in Operation BLOCKBUSTER, launched three days after the delayed GRENADE had kicked off.

A major point of criticism is leveled at both British and American higher level commanders for insisting on advancing through the forests while pushing from the German border to the Rhine. Fighting through the forest and the Siegfried defenses could not have been avoided until breaking out onto the Rhine plain. The selection of the time and place of such an advance is another matter. Bradley, against whom major criticism is directed, had little choice. He was directed to keep the bulk of his forces north of the Ardennes to protect the flank of Montgomery's forces. The advances to close along the Roer River and control the dams lay through the forests in his area — the Huertgen in particular. There was no place else to go.

The book pays little or no attention to three failures by Montgomery that directly impacted on the need for a Rhineland campaign. First, the failures to advance to the Rhine in early September 1944, when gas was available and the way open following his seizure of Antwerp; second, the failure of the Arnhem phase of the Market-Garden Operation; and, third, the necessity of diverting large forces, chiefly the Canadians, to clear the approaches to Antwerp from mid-October to 8 November, when those approaches could have been taken without a significant struggle in early September. Montgomery should

have fought his Operation VERITABLE in September-November 1944, rather than in February-March 1945.

Some excellent, well-researched, personal narrative accounts of Canadian and British small unit actions at company and battalion level are contained in the book. However, the maps included in the book are too general in nature and large-scale to follow unit actions, so that much of the narrative effect is lost.

A basic difference in American and British tactical concepts, at least of the leaders concerned, is pointed out in the book but not discussed at any length. Hodges and Patton both "bounced" the Rhine, and Simpson could have, and urged that he be allowed to do so. This was denied, largely because it did not fit the overall plan. Both the Hodges and the Patton crossings, played down in the book as not on suitable terrain, were the first openings through which the flood of American troops of First and Third Army would fan out over Germany. Had Simpson been allowed to carry out his "bounce" of the river, it is likely that Montgomery's set-piece crossing would never have been necessary.

Among the book's many comments that might be considered somewhat different from the American viewpoint, two more might be mentioned. The book indicates that Eisenhower almost lost his job as a result of Montgomery's famous, or infamous, January 7, 1945 press conference concerning his part in the Battle of the Bulge. Most Americans consider it the other way around — that Montgomery almost lost his job. The book also notes that the victory the Americans had achieved in the Ardennes had come about under British command. Many Americans believe that Montgomery's command of First Army lengthened the Ar-



dennes battle and restrained the efforts of the commanders to get the job done.

The photographs include some never-before-seen material. However, some captions lead to doubts. For example, a photograph captioned as "the German Panther tank that his company knocked out on the Goch-Calcar Road" is obviously not a photograph of a Panther tank at all, but instead of a German Mark IV.

The book provides American readers some understanding of the fighting ability and sacrifice of the Canadian and British troops in their part of the battle of the Rhineland. But in addition, the bias of this book will serve to help keep alive the misunderstandings between Americans and their Allies concerning just what actually happened in the great crusade of 1944-1945.

LEO D. JOHNS
COL, USA, Ret.
Midlothian, Va.

The Petsamo-Kirkenes Operation: Soviet Breakthrough and Pursuit in the Arctic, October 1944, (Leavenworth Papers Number 17), by Major James F. Gebhardt, 182 pages, 1990.

This is the first English version of the largest battle in modern military history fought north of the Arctic Circle. While no comparable U.S. operation exists, the Soviets study this operation as a model for arctic warfare and have published more than 50 journal articles on the campaign since 1964.

Gebhardt, a military analyst at the U.S. Army's Soviet Army Studies Office, focuses on the Soviet view of the operational level and on the joint and combined arms aspects of the offensive.

Of particular interest to armor officers is the role of the Soviet 14th Army's armored forces in this offensive against German mountain troops 200 miles north of the Arctic Circle bounded by Murmansk, USSR and Kirkenes, Norway. The Soviet superiority in armor, however, was of no great value, says Gebhardt. The Germans lacked armor and were outnumbered 6-1 in airpower.

From the outset, it was clear that armor would have a difficult time maneuvering in the terrain. Gebhardt describes the "bald, rocky hills, interspersed with

ravines and swampy depressions," forcing all vehicles to remain on the roads. Tanks and self-propelled artillery were forced to assume the role of infantry support because it was impossible to deploy on either side of the roads, making fire possible only from selected positions.

Armored units suffered high combat mobility losses — a reflection both of German antitank defenses and the terrain. Despite these problems, says Gebhardt, "Current Soviet doctrine and force structure continue to reflect the employment of tanks in arctic regions." While the Soviets failed to achieve their mission of encircling and destroying the XIX Mountain Corps, the Soviet operational plan was "exceptional in concentrating overwhelming combat power on a narrow breakthrough sector," says Gebhardt.

Gebhardt notes that Soviet analysts now recognize that helicopters and all-terrain vehicles have changed the way light forces will operate on arctic terrain. He adds, however, "Even if the vehicles of war have changed since 1944, arctic weather and terrain have not. Proponents of light forces must always keep in mind these forces' inherent limitations, which over time considerably lowered their combat effectiveness in this operation.

This history and analysis makes good reading for its general operational lessons and holds special value for units with possible arctic contingency or mobilization missions.

THOMAS J. VANCE
CPT, AG, USAR
Kalamazoo, Mich.

Red Army, by Ralph Peters. Pocket Books Paperback, New York, 1989. 403 pages. \$5.50.

So, you think the Soviets will not attack the West through Europe? That the spectre of Soviet domination has collapsed alongside the Berlin Wall? Or that the Soviets are too impotent or too smart to risk a Third World War? That modern war will be surgically neat because of high technology?

Ralph Peters' novel, Red Army, reveals just how wrong we may be. Red Army is a novel of World War III, written entirely from the Soviet view. The war in Europe is initiated by a Soviet surprise attack all along NATO's Central Front. The Soviet government has panicked at the increas-

ingly alarming rate of the military economic and political gap widening between the Soviet Union and the West. Fearful of its national decline and of a NATO first strike, the Soviets lose control of their fear and attack first. The scenario is very much like what we see building up in the Soviet Union today.

Although touted by its advertisers as "going Tom Clancy one better," Red Army is not like Clancy's work at all. It is better. Ralph Peters focuses on the human element of modern warfare with a style unmatched by Clancy. Peters' background as a U.S. Army intelligence officer, Soviet analyst and linguist, has provided his insight into the Soviet soldier's human condition. And it is probably not so different from our own.

He takes the reader into horrific battle with a motorized rifle company infantryman, with a reconnaissance platoon lieutenant, a tank battalion commander, an airborne unit political officer, an aging artilleryman, and an army commanding general. Seen through the eyes of Soviet soldiers, modern combat is realistically portrayed as the most terrifying, uncertain, and confusing experience of man, especially when technology vies with man for control of our lives.

Peters narrows the action to the northern part of Europe, where Soviet armies smash into NATO forces of the Dutch, British, and West Germans. Avoiding techno-war minutiae, Peters races the reader through high-speed mechanized combat where events move too quickly to be controlled and where emotion overrules discipline. Peters' Soviet characters display chillingly real human emotions, thoughts, fears, and actions as they try to cope with the shock and horror of rapidly changing combat situations.

Much better than anything that fellow soldier Harold Coyle has yet produced, Peters' Red Army is more like Guy Sajer's World War II classic, The Forgotten Soldier, in its portrayal of man in combat. You will not forget that Red Army is just a novel, but you will be worn out when you finally put it down. It is refreshing to read a novel about men in modern war instead of just another gee-whiz technocrat's dream. Certainly entertaining and exciting, this book puts the soldier back into war as he should be — as a man.

W. D. BUSHNELL
LTC, USMC
Ft. Knox, Ky.

The Long Gray Line, by Rick Atkinson, Houghton Mifflin Company, Boston, 1989, 550 pages.

Author Rick Atkinson is a staff writer for the Washington Post. He is an Army brat who won an appointment to West Point in 1970, but chose not to go. As a reporter for The Kansas City Star in April 1982, he won a Pulitzer Prize for a series of articles about the U.S. Military Academy, a series that evolved into this book.

When the 807 cadets of the Class of '66 reported to Beast Barracks in early July of 1962, there was little to distinguish them from the over 24,000 cadets who had preceded them on the plains of West Point. In many respects, they were the direct descendants of those who had gone before. A large number were second- and third-generation cadets, following in the footsteps of fathers and grandfathers. Those who could not point to ancestors who had graduated from the Academy were still the spiritual descendants of Thayer and Lee and Pershing and Eisenhower.

These 807 young men were touted as the cream of the American crop. Virtually all had already distinguished themselves in their young lives. All were in the upper percentiles of American scholarship and each had proven himself in one sport or another as well. They had all displayed above-average leadership among their high school or college peers.

In short, these were hand-picked young men, men worthy of joining the Long Gray Line.

For the most part, they came from the upper part of American society — at least the upper part of the mainstream.

There weren't too many racial or religious minorities represented, nor were there any women. Like their peers in the civilian colleges and universities, and those who joined the working force straight out of high school, they were products of the Cold War and the Eisenhower years. And, like most of their contemporaries, they had been bitten by the infectious spirit of the Kennedy revival bug. Each in his own way was seeking the New Frontier.

It is an axiom of American life that the military is a bastion of conservatism, slow to recognize change, and even slower to react to it. If this is true, then West Point in the mid-1960s was the Ivory Tower of that bastion, surrounded by walls and a crocodile-infested moat to keep change

and the mere mortal world out. The 579 men who were commissioned as second lieutenants in June of 1966 had indeed been isolated from the changes in society during their four years at West Point. They were in for the shock of their young lives.

For, in the words of America's poet-prophet, Bob Dylan, "The times they were a changin'." The Class of '66 was not destined to be like the classes which had preceded it. In retrospect, it was inevitable that this be so. American society itself was in motion in the early and mid-1960s, and those who were part of the West Point Class of 1966 became inexorably caught up in the swirl of that momentous time. Despite the walls and moats, despite other real and artificial obstacles, the cadets couldn't help but react to their world and their generation.

This is the real story contained in The Long Gray Line. It is the dilemma faced by West Point (the institution) and the faculty, graduates, and cadets in the Vietnam and post-Vietnam era. It is a microcosm of the same dilemma faced by all the nation's social institutions — church, government, industry, academia, the family — and literally by each and every citizen who was somehow touched by that wrenching emotional experience called "The Sixties."

Whether or not to stick to the tried-and-true "American" values, or to change with the times. Whether it was better to remain faithful to the values that had made West Point and America something special — unqualified honesty, unquestioning loyalty to authority, uncompromising standards of hard work, unflinching patriotism — and thus, to be out of step with what the media helped us to perceive to be a majority of our fellow citizens. Or to "go with the flow," to "do your own thing," to see truth and honesty and patriotism and social order to be relative, not absolute, values.

These were the moral dilemmas faced by all young Americans, not just the cadets who stood for their final formation in cadet gray in June 1966. But for those who were imbued with the cadet oath and the tradition of the Long Gray Line, the decisions were especially difficult. The morality of the war, body counts, atrocities, just living in a society which had become, at best, ambivalent — at worst openly hostile — to its military; these were the special burdens carried by the graduates of the West Point Class of 1966 as they went off to war in Vietnam.

The Long Gray Line relates how some members of that class dealt with these problems and dilemmas, and how their lives were affected by the choices they made during and after the war. And, like the times and the war it describes, it was probably unavoidable that the book itself would become controversial. Tom Buckley, in the New York Times Book Review, called The Long Gray Line "a shapeless grab bag, lacking selectivity, synthesis (and)...a point of view." Worse, the reviewer discredits the Class of '66 itself, apparently appalled at the "lack of elan among young men who, after all, had chosen the profession of arms...."

James Fallows, Washington editor of The Atlantic, disagrees vehemently. He writes that he would, "be amazed if more than one reader in a thousand agrees (with Buckley's analysis)." In sum, he, "can't think of another book that gives a clearer emotional sense of what Vietnam cost."

To be sure, The Long Gray Line raises as many questions as it answers. Why did the author pick the three "stars" he did, one a clear success as a military professional, one who early on opted out of the war and a military career, and one who probably would have failed at whatever he chose to do? Are these three typical of the class? Why does Atkinson compare the Class of '66 to earlier classes, such as the Class of '60, when it would be equally interesting to see how the class compared to, say, the Class of '68 or even '70, when the effects of the war and societal change were even more dramatic?

But isn't that the purpose of such histories — to inform the reader, to answer his or her questions, and to arouse an intellectual curiosity to search even further for the ultimate truth? If this is indeed the test, then The Long Gray Line passes with flying colors. The reader, regardless of the opinions he or she forms about West Point and the military as institutions, and the individuals who made up the Class of '66, will lay the book down better informed about the facts and feelings of a nation and society in turmoil. What the reader must avoid at all costs — and, fortunately, the author has avoided this pitfall — is to apply the logic and standards of the 1980s and 1990s to the 1960s. With this in mind, prepare yourself for a very emotional, but immensely satisfying journey with the class of '66.

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Washington, DC

50th Anniversary - 1st and 2d Armored Divisions

Activated July 10, 1940



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