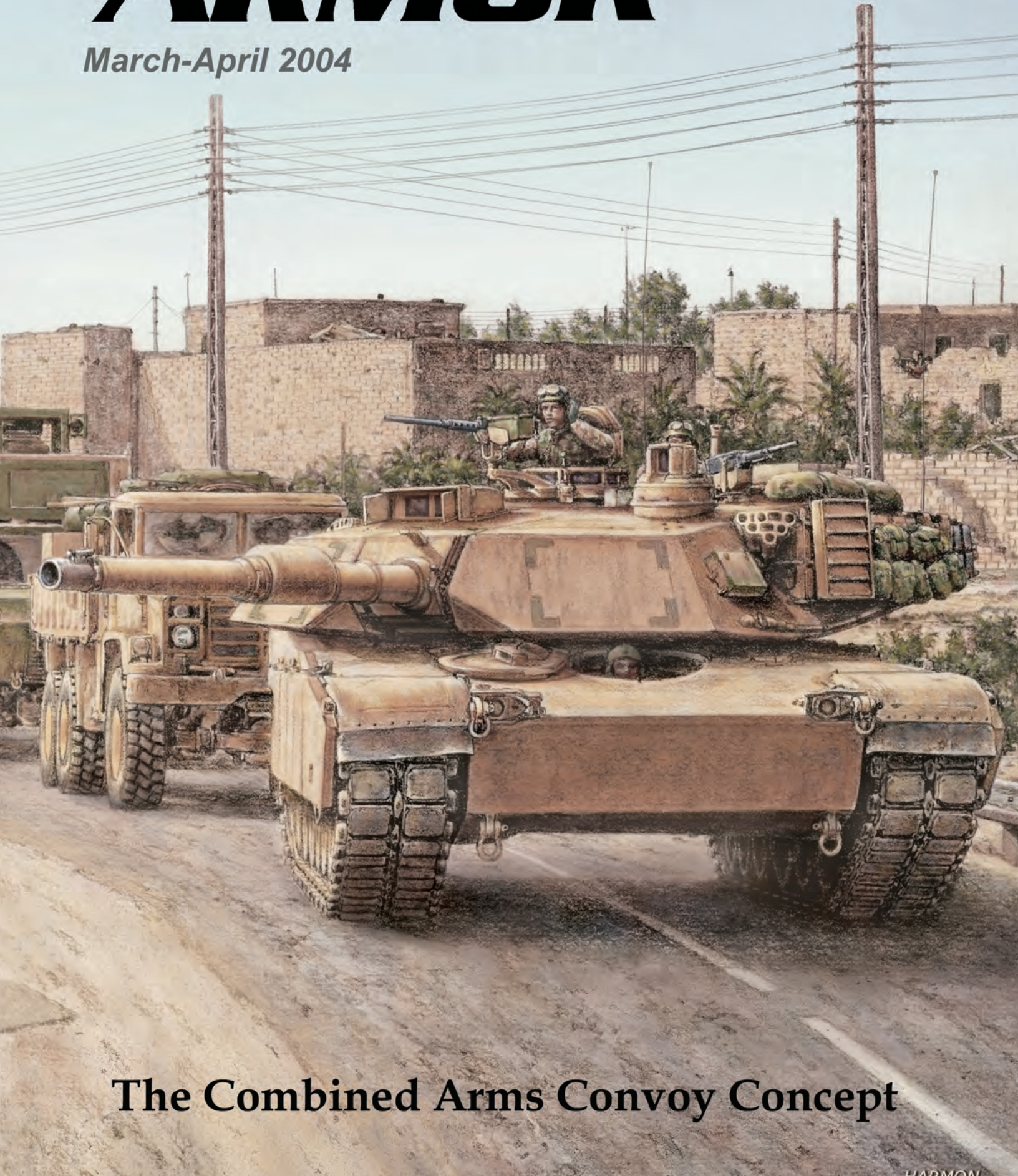


ARMOR

March-April 2004



The Combined Arms Convoy Concept

ARMOR

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Once More Unto the Breach



I want to thank all of you who responded to *ARMOR's* reader survey. The results have not yet been analyzed, but the response was quite overwhelming and many of your recommendations are being reviewed for possible implementation in future editions.

In just one year, the people of Iraq have been liberated from an evil regime and the seeds of democracy have been sown. Our fighting forces are continuing their stalwart efforts of restoring order from chaos. For units preparing to deploy to Iraq, this issue of *ARMOR* offers several articles from Soldiers currently serving in Iraq that will assist you in training and preparing your units for deployment.

Convoy operations in Iraq have proven to be the biggest risk to Army units and Soldiers, and have been used by the enemy to disrupt, torment, and inflict havoc on our troopers. Captain Klaudius K. Robinson's article, "Defeating the Threat in Iraq Through the Combined Arms Convoy Concept (CAC2)," explains weaknesses in our training program and discusses how his unit continues to adjust against an unconventional, asymmetrical, and adaptive threat in Iraq. He provides numerous examples of how his unit adapts tactics and procedures to respond to this elusive threat.

Initial observations from Iraq seem to validate the success of the Stryker Brigade Combat Team. In his article, "Fighting the Stryker Rifle Company," Captain Robert Thornton discusses the tactical operations and flexibility of the Stryker rifle company in the offense, and how capabilities are built into its organization. The Stryker rifle company's offensive and defensive mission employments are extremely diverse, lethal, and include 20 various types of Strykers and organic combat multipliers. His article is based on company-level training executed prior to the Stryker initial operation test and evaluation.

In his article, "Aerial Insertions — Planning Considerations for the Brigade Reconnaissance Troop," Captain Brian P. Stevens discusses how air inserting elements of the BRT can have significant payoff for the brigade combat team in both information collecting and fire support, but it requires detailed planning and coordination within the BCT and with the division to be successful. By employing an aggressive and deep intelligence, surveillance, and reconnaissance plan, a BCT can attain a significant tactical advantage over an enemy force, which ultimately contributes to the success of an offensive operation.

The debate on how a scout platoon should be equipped, trained, and resourced has been around for years. Staff Sergeant Matthew Mayo jumps into the fray in his article, "Adjustments to the Task Force Scout Platoon." A veteran of combat operations in Iraq, Mayo lends credibility to the debate in advocating for changing personnel manning, communications, equipment, and weapons of the scout platoon.

Longtime *ARMOR* contributor, Professor Richard Ogorkiewicz returns with his latest article, "Armor and Future Urban Warfare," which examines the necessity of using armor in urban operations, therefore, armor should be prepared to play a major role in future urban operations. He argues for the development of new technology in armament, protection, and mobility to adapt to the requirements of fighting and surviving in an urban environment.

In the November-December 2002 issue of *ARMOR*, Major William J. VandenBergh's "Executing the Double Retrograde Delay," was published in honor of the 194th Tank Battalion's bravery during the Luzon defensive campaign. VandenBergh continues his tribute to the soldiers of 194th Tank Battalion in this issue. "Employing an Armor QRF in the Area Defense: The 194th Tank Battalion in action during the Luzon Defensive Campaign 1941-42," expands on the 194th Tank Battalion's action in the Philippines, and offers an historical battle analysis. VandenBergh further explores the valiant role of the 194th Tank Battalion in delaying the Japanese attempts at conquering the Philippines.

Lessons learned on combat operations in Iraq continue to emerge. The U.S. Army is fortunate to have adaptive and creative leaders at all levels who recognize that sometimes our training fails to fit reality. Sergeant First Class Timothy L. Gray provides his thoughts in, "Time for a Change in Tank Gunnery." Gray identifies the shortcomings of our current gunnery program when compared with what is happening on the ground in Iraq and offers solutions that units can implement with little disruption.

ARMOR appreciates the positive comments, as well as the creative criticism, from the field. It is our intent to keep providing our dedicated readers with quality, timely, and well-written articles. Please keep sending your thoughts, ideas, and articles.

— DRM

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LETTERS

Combat Armor Badge Debate Lives On

Dear *ARMOR*,

Now that General Tait has weighed in on the Armor badge, I guess the 34th Editor of *ARMOR* Magazine can weigh in as well.

As the commander of an airmobile cavalry troop assigned to an air cavalry squadron of the First Aviation Brigade in Vietnam, I awarded the combat infantryman badge (CIB) or combat medical badge (CMB) to my enlisted soldiers who were all, to a man, either 11-series infantrymen (scouts, light weapons infantrymen, indirect and direct fire crewman), or combat medics either mounted in jeeps or three-quarter ton trucks mounted, or dismounted, or airmobile. However, I was not allowed to award their junior leaders CIBs, who were all Armor officers, even though they led those same infantry soldiers on patrols, combat actions, and conducted the dismounted infantry airmobile insertions and extractions. Adding insult to injury, Armor officer leaders of identical TOE organizations in air cavalry squadrons, assigned to airborne and airmobile divisions, were awarded the CIB by their division commanders.

My noncommissioned officers (NCOs) and soldiers, who clearly saw the injustice being done to their platoon leaders, conducted their own ceremonies at which they "awarded" their platoon leaders the CIB using the same criteria they themselves had met. Of course, the CIBs awarded by enlisted infantry soldiers never appeared in records jackets, but they were nevertheless highly prized by the young lieutenants who received them. But every enlisted man, NCO, and officer in my unit became acutely aware of how military bureaucrats could wreak injustice on deserving combat leaders.

The issue of the Combat Armor Badge (CAB) really grew contentious because so many Armor officers and officers of other branches were awarded the CIB in Vietnam for serving as advisors to the Vietnamese army (in practically any capacity), or were simply assigned as staff officers in U.S. infantry divisions. Infantry division commanders were authorized to award the CIB. Some were quite liberal in their interpretation of the rules while others were not. Granting the award was, consequently, quite arbitrary. Thus some received CIBs while never setting foot outside the division tactical operations center. Consequently, the CIB became the de facto "combat action badge." My best friend, a signal corps officer in the 9th Infantry Division, received his CIB while never venturing beyond the berm at Dong Tam. The result of the Vietnam CIB policy was to put into question the legitimacy of every Vietnam CIB awarded to an officer or senior NCO.

The issue of how to award a combat recognition badge gets more complicated as time goes on. Could General Marshall have foreseen today's 360-degree battlefield in which truck drivers and self-propelled artillerymen routinely conduct offensive light infantry missions like patrols and raids against irregular forces? Is

there any place in today's full-spectrum ground combat for General Marshall's thinking regarding these awards? The award of a badge for closing with and destroying the enemy can no longer be awarded to one class of persons of a particular favored branch or MOS, while discriminating against another class, but must be based on individual merit. No longer should infantrymen be awarded the CIB for simply "showing up" and snoozing in the back of a Bradley, while up the line, tankers, supply, and maintenance clerks, and others who engage in desperate offensive close combat are ignored. Would General Marshall, were he Chief of Staff today, have condoned granting a CIB to a male infantryman conducting a raid while denying it to a female military police also conducting a raid? Are raids not offensive close combat?

To look at it another way, let's substitute the word "white" for the word "infantryman" and substitute the word "black" for all other fighting soldiers. Let the regulations then state that only white soldiers are eligible for the CIB. Only in the Army is one still rewarded for what class they belong to and not for what they actually do. And, it is really out of step with the message that "An Army of One" is attempting to send. We are all soldiers and totally interdependent.

Does anyone seriously believe that the general officers who comprise our senior leadership will step up to the plate on this? Look at the 3- and 4-star armor leaders who have forgotten that "you dance with the one that 'brung' ya." General Gordon Sullivan, assistant commandant, Armor School, Army chief of staff, president of the Association of the U.S. Army (AUSA), CIB recipient; General Erik Shinseki, Army Chief of Staff; General Louis C. Wagner, 4-star commander of Army Materiel Command and commandant, U.S. Army Armor Center/School, CIB recipient; Lieutenant General Rick Brown, commandant, U.S. Army Armor Center/School, first chief of armor *who wore his branch insignia on his general officer uniform*, CIB recipient.

They were among the best our branch produced! But, if these guys, especially the former chiefs of staff are either not powerful enough, didn't care enough then, and don't care now, or have been co-opted by the system as they rose within it, then your best chance to get a Combat Armor Badge has passed, never to come again. Instead, use that energy to promote a combat action badge (or ribbon with branch accoutrement or color) for all those who actually deserve it, whatever their branch or MOS. However the normally farsighted Army usually seems, it is oddly myopic on this one.

I recommend that the CIB and CAB go the way of the Marine divisional patches. The Marines, no strangers to historical precedents, seem to do okay without them on their uniforms, but they are proudly displayed otherwise. If the CIB and CAB are needed so badly, let the associations award them as unofficial recognition badges to be worn at appropriate

occasions as are cavalry spurs, sabers, Stetson hats, and the Order of Saint George.

CHARLES R. STEINER
LTC, U.S. Army, Retired

Dear *ARMOR*,

This is addressed to the author of the anonymous letter under, "More Badge Comments" in the January-February 2004 issue of *ARMOR*. First of all, if you do not have the guts to sign your name — do not write! Secondly, does the name Sullivan, 4 stars, ring a bell? Finally, give it a rest; stop beating on a dead horse.

What you are or what you are not cannot be measured by a badge. You are who you are. A badge does not change who you are. A bauble that anyone can buy and wear proves nothing!

JOSEPH C. KOPACZ
COL, U.S. Army, Retired

Conduct Maneuver Training at Maneuver Training Centers

Dear *ARMOR*,

In your January-February 2004 issue, Major Salas, "Musings of An Armor Officer," identified a disturbing trend at our combat training centers — too much emphasis on the planning process. When General Saint created the Combat Maneuver Training Center, it was just that, a maneuver training center. As different organizations have modified General Saint's vision, it seems all too often the close fight; the direct firefight is secondary. Yet, a training center is the only place where our Army can practice this essential combat skill.

I just spent 4½ years as a coach in the leader training program at Fort Irwin, and there is no doubt that maneuver training is significantly diluted by a lack of home-station resources, an operating tempo that does not allow units to properly train to exploit an National Training Center (NTC) rotation, and adding way too much extraneous stuff to the already overloaded NTC plate. To make matters worse, Major Salas is exactly right. Most crews and small units are destroyed so quickly by the opposing force's (OPFOR's) antitank snipers (BRDM, T-80, and BMP variety) that crews and units do not achieve anywhere near their training potential. Thanks to multiple repetitions as small units, the OPFOR has mastered the fundamental of tactical combat. They understand reconnaissance (not just their scouts but all units as they maneuver). They understand how to use the terrain to hide their movement. They are not shy about dismounting to peak over the hill. They almost always set a base of fire. They strive to engage the enemy from at least two directions, preferably three, if OPFOR attack aviation is involved. They use artillery to set desirable conditions for the direct firefight. Their leaders at all levels are ruthless in enforcing gunnery preparation and standards. And, most importantly, they get

Continued on Page 46

Major General Terry L. Tucker
Commanding General
U.S. Army Armor Center



Forging the Future — Armor Conference 2004

Armor Conference 2004 promises to be another outstanding opportunity for our Armor and Cavalry force to focus their collective energies on discussing and solving the challenges that our Soldiers face across the operational and warfighting spectrum. This has been a busy year for all of us, and it is important that we discuss and capture lessons learned before we forge too far forward.

As in previous years, the Armor Conference will host an all-star lineup of guest speakers who have been at the forefront in leading Soldiers and units during this ongoing Global War on Terrorism campaign and Operation Iraqi Freedom. I am in awe of how well our forces have adapted to the demands placed on them, and once again, our Tankers and Cavalry Troopers have proven they are among the best in the world.

As Chief of Armor, I am responsible for ensuring the Armor Center continues to produce well-trained leaders and Soldiers, and to adjust our training paradigm to meet the asymmetrical challenges unfolding in this dynamic and dangerous environment. During the Armor Conference, there will be round table discussions and subject-matter expert briefings intended to present more detailed updates, overviews, and discussions on the many aspects of this year's theme.

Key leaders from the 1st Armor Training Brigade (ATB) will brief participants on the evolution of initial entry training (IET) to build Soldiers and Warriors to meet the needs of the force in the contemporary operating environment. The 1st ATB will discuss how they are adapting training for IET Soldiers to emphasize the basic Warrior tasks and Warrior drills required for all Soldiers, in addition to military occupational skills trained in OSUT. IET is moving toward more basic tactical training in a field setting to better prepare all Soldiers for the demands of

combat over extended periods. Tasks previously conducted in a garrison setting are trained as early as possible in a field setting so they can be reinforced throughout the Soldiers' IET. Lessons previously taught through large-group lectures are now taught in a small-group setting with more hands-on training, practical exercises, and competition between groups.

Technology and doctrinal innovation will be a key theme for the 16th Cavalry Regiment during this year's Armor Conference. Subject-matter experts from the regiment will brief participants on how they are providing the force with the best qualified leaders by incorporating Force XXI Battle Command Brigade and Below (FBCB2) and maneuver control system-light training into our core courses of the Armor Captains Career Course and the Armor Officer Basic Course. We have already incorporated FBCB2 operator and integrator training into the task force defense instruction and Warfighter exercises, with the intent that leaders arrive to their follow-on assignments equipped with a working knowledge of digital operations.

The Directorate of Training, Doctrine, and Combat Development (TDCD) will present seven subject-matter expert briefings to the force during the conference. Our Doctrine Division will discuss joint operations and doctrine for the new brigade combat teams. The purpose of the briefing is to enlighten the force on how our current brigades are transforming to conduct operations in the joint environment based on the Unit of Action model. Doctrine will also brief new gunnery standards based on the contemporary operating environment and lessons learned from Operation Iraqi Freedom. These briefings include information on tank gunnery, scout gunnery, and the status of mobile-gun system (MGS) gunnery. The Combat Development Division will brief the status of the 2d Cavalry Regiment's transforma-

tion and mounted battle command on the move (MBCOTM). The Training Division will present a TADSS report to the field that focuses on the conduct of fire trainer advanced gunnery training system (COFT-AGTS), a scenario-based gunnery simulator, and thru-sight video (TSV) that allows the commander to verify the gunner's performance, debrief the exercise, and assess training effectiveness.

The Training Division will also brief the new officer foundation standards (OFS) manual for combined arms brigade staff officers. This presentation describes how the U.S. Army's first comprehensive task analysis on combined arms brigade staff officers was conducted. It provides information on the program's concept, task selection process, and task analysis procedures. The Training Division will complete the slate of briefings discussing Armor Center advanced distributed learning initiatives. This presentation includes a brief history of armor distance learning, information on courses currently using distance learning, and examples of courseware, which demonstrate different learning strategies. Also included are descriptions and images of interactive tools and the collaborative environment used for on-line synchronous small-group instruction.

These are just a few of the many topics that will be addressed at this year's Armor Conference. We will also have our usual mix of social and fun activities that award us the opportunity to reminisce about the past and catch up with old friends. I encourage you to attend this conference. Additional information is available at our web site: www.knox.army.mil/arconf/.

Forge the Thunderbolt!

CSM George DeSario Jr.
Command Sergeant Major
U.S. Army Armor Center



Reevaluating the Current NCO Education System

Flexibility, adaptability, modernization. These are the buzzwords of today's Army and Armor Force. They are also the cornerstones of an effective Armor team in light of the ever-changing environment in which the force operates. Without change, there is stagnation. Failure to perceive the need for change leads to a force incapable of meeting the multiple demands required for mission success. In response to recent demands, leaders within the Armor community are reevaluating the current Noncommissioned Officer Education System (NCOES) and examining how courses might be redesigned to better train our Armor non-commissioned officers (NCOs), and particularly those NCOs whose leadership is essential to crew-, section-, and platoon-level mission success.

There are four progressive training tiers within the NCOES: the Primary Leadership Development Course (PLDC), the Basic Noncommissioned Officers Course (BNCOC), the Advanced Noncommissioned Officers Course (ANCOC), and the United States Army Sergeants Major Course (USASMC). The PLDC and USASMC provide branch-immaterial training to meet the needs of the entry-level NCO and senior NCO, respectively. For career-specific training, BNCOC and ANCOC provide basic and advanced leader and tactical skills necessary for developing superior Armor NCOs.

Ongoing combat and sustainment missions in Iraq and Afghanistan, and the deployment and redeployment of units to multiple theaters, indicate the need for a revitalized NCOES, and in particular for a BNCOC and an ANCOC that meet leader and tactical training requirements for the individual sergeant and the section or platoon he will lead. The Fort Knox Noncommissioned Offi-

cers' Academy (NCOA) is currently exploring several initiatives that will help meet these new challenges. There are two primary focus areas: updated course structure and preparation for student surges.

Quality training is essential for successful BNCOC and ANCOC graduates, no matter what the length of the course. NCOA is examining a streamlined course structure in BNCOC and ANCOC that will incorporate unit-level training for specific tasks such as Tank and Bradley Gunnery Skills Tests. This will serve two purposes. First, it will allow training time at Fort Knox to become more focused on the modern battlefield, including urban combat, stability and support, and digital battlefield operations.

Additionally, the streamlined course structure will minimize an NCO's time away from his unit, enhancing the ability to build a cohesive, stable force. Student preparation at the unit will remain paramount to successful course completion.

One key component of the updated courses includes incorporating Force XXI Battle Command Brigade and Below (FBCB2) training beginning in October 2004 for both BNCOC and ANCOC students.

In addition to updating BNCOC and ANCOC courses to meet the needs of the Armor force, leaders at the NCOA are also preparing for student surges that will result from units returning from deployments in Iraq and Afghanistan. The goal is to train soldiers who were unable to attend or complete an NCOES course due to deployment. This effort will keep soldiers competitive with their peers, and aid in continuing unit preparedness with well-trained and quali-

fied leaders. Division chiefs in BNCOC and ANCOC are working with Armor community leaders and course instructors to develop workable systems that will allow the academy to handle twice the normal student load, without losing the quality of education and leadership currently promoted throughout the academy. As part of surge readiness, mobile training teams (MTTs) are prepared to travel to Armor installations to train soldiers locally. Local courses would be fast-paced to accomplish training goals within a shorter time frame, minimizing the impact on the unit while maintaining the integrity of course material. Installation support for resources will be essential to the success of these MTTs.

Central to the NCOA's goals of revitalizing Armor BNCOC and ANCOC courses is the desire to provide leader and tactical training that is flexible, adaptive, and modern — essential ingredients to a successful Armor force. Within this framework, the NCOA will continue to produce an Armor NCO corps that is prepared to lead scouts and tankers on today's modern battlefield and is poised to lead the way for future force modernization.

I had an opportunity to visit Command Sergeant Major Richard Hernandez and his impressive soldiers at the 1st Cavalry Division, III Corps, Fort Hood, Texas. I enjoyed visiting with these soldiers and compliment their professionalism and drive to lead by example.

I wish to extend a special thanks to our own First Sergeant Noe, BNCOC Division Chief; keep raising the standard!

Iron Discipline and Standards!



Defeating the Threat in Iraq Through the Combined Arms Convoy Concept (CAC2)

by Captain Klaudius K. Robinson

Coalition forces face an unconventional, asymmetrical, and adaptive threat in Iraq. Noncompliant forces (NCFs), Former Regime Loyalist (FRLs), and foreign fighters all contribute to a threat most mounted Army units have not seen or dealt with recently. U.S. forces are continually developing tactics, techniques, and procedures (TTPs) to defeat NCFs, FRLs, and foreign fighters (these factions will be referred to as the enemy), but in turn, these factions adapt and the struggle becomes an action-reaction-counteraction cycle.

The current threat in Iraq is very closely associated with guerilla-type forces. The threat is very similar to the threat faced by rotational units at the Joint Readiness Training Center (JRTC), Fort Polk, Louisiana. The only difference is that the enemy in Iraq is not uniformed, and therefore difficult to identify. The enemy is not willing to take heavy losses and is aware of the overall supremacy of the coalition forces if engaged conventionally. Force-on-force maneuver warfare is not advantageous to the enemy when he is outmanned and outgunned. Therefore, other tactics are used to engage coalition forces.

Initially, the enemy used simple ambushes involving rocket-propelled grenade (RPG) attacks and small arms fire (AK-47s and light machine guns). The attacks were carried out by a small force, which usually broke contact after the initial volley of fire to increase survivability. Ambushes were set either on one side of the road, or both when the road was elevated, allowing the enemy to engage coalition forces without firing into

each other. The confusion of the initial volley, coupled with the small size of the enemy force breaking contact, made it extremely difficult to acquire, engage, and destroy targets. Most ambushes involved friendly mounted units that were engaged from the flanks when traveling at high speed. Mounted units had trouble acquiring and engaging the enemy during the ambushes. These factors led to very few confirmed kills resulting from friendly returned fire. In turn, the small size of the enemy forces and limited scope of weaponry used, very rarely, caused casualties or damage to equipment. Enemy forces targeted mostly soft-skinned vehicles traveling in convoys or on patrols, such as high-mobility, multipurpose wheeled vehicles (HMMWVs), light medium tactical vehicles (LMTVs), and heavy expanded mobility tactical trucks (HEMTTs).

Initially, light and heavy armored vehicles, such as M113s and M1s were very rarely targeted. As the threat progressed, there was an increase in targeting soft-skinned vehicles, but attacks on M1 tanks were extremely rare. The threat was countered by increasing the minimum number of vehicles and personnel in convoys and patrols. The enemy responded by employing improvised explosive devices (IEDs) in ambushes in conjunction with RPG and small arms fire. The attacks then shifted to using IEDs almost exclusively. Using IEDs allowed the enemy to conduct ambushes without self-exposure to coalition fire or action. This type of threat is not going to cause mass casualties. It will, however, disrupt operations and force commanders to re-evaluate how they conduct combat and support operations. Commanders are forced to develop new TTPs and shed training principles that they have come to rely on.

Logistics and administrative convoys are easy enemy targets. It is easy to see why, soft-skinned vehicles offer less protection, are easier to destroy, and are perceived as a lesser threat by enemy forces. The battalion scout platoon and any other wheeled vehicles with crew-served weapons are heavily used for providing escorts to administrative convoys, but logistics convoys are expected to provide their own security. Combat power, such as tank companies and mortar platoons, was used for force protection at forward operating bases (FOBs), as quick reaction forces (QRFs), and reserved for major offensive operations such as battalion- or brigade-level raids. This leads to very little combat power being applied to defeat the main threat — ambushes.

Mounted forces are not trained to deal with this type of threat. During each rotation to the JRTC, a light infantry brigade is usually augmented by one armored company team. There are normally 10 rotations in a year, and there are a lot more than 10 armored company teams in the Army. As a result, mounted units have had almost no opportunity to train against this type of threat during a combat training center (CTC) rotation at the platoon/company level, much less at the battalion/brigade level. Despite the limited training opportunities, we have an increase in this type of threat used in recent years. The Russians have seen it in Chechnya and Afghanistan and U.S. forces have seen it in Somalia, Afghanistan, and Iraq. Light infantry forces are pitted against this threat at the JRTC, and as a result, have had success, especially in Afghanistan.

The National Training Center (NTC) does a wonderful job preparing our mounted force for full scale maneuver warfare, but does very little to prepare our mounted forces for the current threat faced in Iraq. The problem lies in the fact that most armored units go to the NTC and, as mentioned before, very few have an opportunity to go to the JRTC. This trend will probably not change in the near future, so how do armored/mounted units

train to defeat the type of threat faced in Iraq? More important-ly, how do they defeat this threat?

We do a good job training our armored units to fight an outdated enemy. Training is not the problem, focusing this training to defeat the correct threat is. There are several steps that can be taken to prepare a mounted force to face the current threat in Iraq. For example, today's tank gunnery focuses on vehicle-on-vehicle engagements with enemy targets always in the front arc of the tank. There are no targets directly to the flanks or even to the rear of the tank, as encountered in ambushes. Instead, engagements should be modified to allow the tank to travel in a direction, and acquire and engage targets to the flanks and rear. For example, the tank travels parallel to the range and has to acquire targets to its flank. Targets should reflect the most likely threat; in this case, it is dismounts.

Mounted units must also train on how to properly encounter the enemy. Not all of Iraq is a desert as seen during the first Gulf War. The Fertile Crescent in Iraq (Tigris and Euphrates River Valleys and tributaries) offers terrain reminiscent of a jungle. Thick vegetation, man-made structures, walls, canals, and dikes severely limit mounted movement along the flanks of the walls. Vehicles are forced to stay on roads and this limits the maneuver space of tank commanders, platoon leaders, and company commanders. As a result, units must focus training on conducting patrols and convoys along roads that are open on the flanks, as well as severely limited by terrain. When ambushed, convoys and patrols must quickly identify which side of the road the ambush originated and mass return fires in that direction. Training must be focused to make this a simple battle drill understood and executed by all crews in the convoy or patrol. Patrols tend to maintain unit integrity but convoys sometimes do not. This is where consistency in training must be reflected across the entire unit so that everyone in the convoy knows what to do when an

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ambush occurs. Battle drills, whether standard or developed as a result of the threat, must be well rehearsed and executed.

Convoy and patrol leaders must know how to use combat multipliers. Essentially, when facing the Iraqi threat, even a convoy is a military combat operation. As a result, it should be treated like one. Troop leading procedures (TLPs) need to be exercised and leaders need to brief operation orders (OPORDs). When planning the convoy or patrol, a leader must plan for contingencies and integrate other branches into his plan. The contingencies should include procedures to follow if ambushed with IEDs or small arms, or if IEDs are found along the road.

Leaders should develop a direct fire plan, plan indirect fires, and rehearse the plan. As stated in *Guide to Military Operations Other Than War*, "Because they often consist of so many disparate elements — many of which may not even be military, or whose members may not speak a common language — convoys must be meticulously planned and prepared. Once the convoy crosses its start point, especially in austere environments, it is very difficult to adjust for shortcomings in preparation or planning."¹

Our leaders and soldiers do a great job of adjusting to a fluid environment, but adjustments can be mitigated with proper planning and preparation. Units can train for this as a platoon or company collective task. Combat multipliers include using indirect fires and air assets. Leaders must be trained on how to properly plan for and employ these assets. "The fire support element of the headquarters initiating the convoy should develop a fire plan to support the convoy. Normally, this is a simple plan consisting of priority targets on which the supporting artillery or mortars are laid and shifted as the convoy progresses along its route. This keeps the artillery focused on the general area of the convoy and greatly improves its responsiveness."² This training must be accomplished through crawl, walk, and run phases. There must also be leader emphasis on conducting this training and not getting wrapped around training the way we have always trained. New threats require new TTPs, but this requires units to train personnel to execute them properly, quickly, and effectively. Training, however, is only part of the problem. Units must defeat the enemy.

To win on a battlefield, a force must defeat another force. This is a simple and plain statement, yet there are many methods and means to an end. Defeat is defined as, "A tactical task to either disrupt or nullify the enemy force commander's plan and subdue his will to fight so that he is unwilling or unable to further pursue his adopted course of action and yields to the will of his opponent."³



On the simplest of levels, to defeat your enemy is to negate his ability to fight. The best way to negate an enemy's ability to fight is to destroy him. To destroy him, you must acquire him. To acquire him, you must go where he is. Currently, the main threat comes from ambushes against convoys and patrols. As a result, this is where combat power needs to be focused and focused toward defeating the individuals who are engaging friendly forces. As a result, combat power must not be tasked out and must be concentrated to accomplish this task.

There are several things that dilute combat power in a unit. Multiple FOBs cause units to commit combat power to secure each FOB and provide QRFs. This also puts more convoys on the road because of an increased logistics need. FOBs not tactically or centrally located in an assigned area of responsibility (AOR) will cause vehicles to travel longer distances to cover the AOR. Longer distance travel equals more maintenance problems, which leads to more deadlined combat power. There are several ways to concentrate combat power, such as limiting the number of FOBs, establishing FOB locations with mission travel distances under consideration, and combining convoys and patrols into one package.

Combining convoys and patrols into one package will focus combat power on the threat. The enemy will be a lot more hesitant in attacking a soft-skinned target that is escorted by a tank. Combining convoys and patrols will also decrease the number of targets available to the enemy. This becomes a combined-arms convoy and leads us to the combined-arms convoy concept (CAC2). The CAC2 uses all the concepts described in this article. Convoys and patrols are combined to take the fight to the enemy and designed and trained to defeat the enemy. The convoy becomes essentially an offensive operation while accomplishing its assigned mission, whether it is logistics or administrative. Therefore, it is treated like an offensive mission.

Leaders must conduct TLPs and resources must be committed for the operation. This includes indirect fire and air assets. This combined-arms package is robust and can respond to a roadside threat, especially an ambush when reaction time is critical. The faster an element can return fire and the more volume of fire that element can produce, the better. For example, a morning logistics package (LOGPAC) is assigned a tank platoon with which to travel. Two OH-58 Kiowa Warriors are also assigned to this package and indirect fires are planned in free fire areas (FFAs) along the planned route. One leader is assigned as the convoy commander and is responsible for conducting TLPs. The leader should be well versed in how to employ all assets available and should have the aid of the battalion or brigade staff in completing his plan. The convoy executes the mission and is ambushed, but because of proper training, the enemy's fire point of origination is identified and the convoy package masses its fires on the enemy. The air assets are critical in this concept because they offer a different vantage point in acquiring the enemy. "Certain air assets can also be extremely helpful. Attack helicopter escort is ideal, as it can simultaneously reconnoiter and provide armed escort."⁴ If the convoy is attacked with IEDs, the attack aviation element is there to potentially identify and destroy the individ-

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ual responsible for initiating the IED. Ground forces can also engage the enemy and fire support assets are possibly used to destroy the enemy. The ground commander has several options to use or combine in an effort to destroy the enemy. More importantly, the convoy/patrol package acts as a deterrent, preventing enemy attacks.

The main task facing our armored force is defeating the enemy. As mentioned before, the best way to accomplish this is to destroy the enemy. The current threat in Iraq is an elusive one and differentiating enemy from innocent bystander is difficult. Therefore, it is not always possible to acquire and destroy the enemy, especially individual attackers. The next best method to defeating the enemy’s intent is by deterrence. By projecting overwhelming combat power through several means, the enemy has difficulty achieving success. The CAC2 concept is one of these methods.

Observation and interdiction through indirect fires is another method. Observation can be achieved through ground elements positioned in observation posts, observing routes traveled by friendly forces. In essence, securing the lines of communication is deemed a priority. Aerial route reconnaissance is another effective course of action. Indirect fires can be used to interdict the enemy by executing fire missions at areas from which friendly forces have been attacked. Indirect fire missions are limited by possible collateral damage caused by proximity to innocent civilians and their structures. They can be used effectively if attacks have occurred away from civilian structures. Commanders must vary the execution of these methods of deterrence to prevent lapsing into a set pattern. Keeping the enemy on his toes deters and interdicts his ability to effectively execute the chosen course of action.

The threat faced in Iraq is different than anything the current armored force has trained for recently. It is true that tanks and

armored vehicles are not designed to fight single individuals in urban or jungle terrain. Light infantry is better suited for this type of fight; however, an armored force can be successful in this type of environment. The enemy will very rarely decide to attack our heavily armored vehicles; instead they focus on the armored force’s Achilles’ heel — its support assets. As a result, new TTPs must be exercised to combat the threat against soft-skinned vehicles. CAC2 is one form of these TTPs. If used, armored forces can take the fight to the enemy and prevent the only form of attack used by the enemy that has any chance of success. Armored leaders must eschew the training mindset and the Soviet doctrine to which they have grown accustomed and develop new TTPs to fight unconventional, asymmetrical, and adaptive threats.

Notes

¹LTC Keith E. Bonn and MSG Anthony E. Baker, *Guide to Military Operations Other Than War*, Stackpole Books, Mechanicsburg, PA, 2000, p. 203.

²Ibid., p. 204.

³U.S. Army Field Manual 101-5-1, *Operational Terms and Graphics*, U.S. Government Printing Office, Washington, D.C., 30 September 1997.

⁴Bonn and Baker, *Guide to Military Operations Other Than War*, p. 204.

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Fighting the Stryker Rifle Company



by Captain Robert Thornton

This article discusses tactical operations in the Stryker Brigade Combat Team (SBCT) rifle company and provides a Stryker company commander's review of recent operations in an effort to generate discussion about capabilities and employment. This article is based on company-level training executed prior to the Stryker initial operation test and evaluation (IOT&E). During the IOT&E, the MGS platoon consisted of three, four-man Stryker antitank guided missile (ATGM) vehicles. Stryker ATGMs will continue to be used as in lieu of vehicles (ILOVs) until developmental and qualification testing of the MGS is completed and fielding begins in FY05.

A Company, Task Force 1st Battalion, 24th Infantry Regiment, SBCT, was deployed from Fort Lewis, Washington, to Fort Knox, Kentucky, to begin instrumentation in preparation for the IOT&E, which is structured to validate the SBCT concept by comparing and contrasting companies from 1st Battalion, 24th Infantry, 1st Brigade (SBCT), 25th Infantry Division (Light), and companies from a 10th Mountain Division battalion. Both battalions will execute similar tasks, in similar conditions, and against a similar opposing force (OPFOR).

The preparation for IOT&E focuses on four tasks: conducting a raid; conducting a perimeter defense; conducting security operations in a stabilized environment; and conducting resupply operations.

Company-level training began in March 2003 and continued through May 2003. It consisted of three separate field-training exercises (FTXs) that varied all the conditions of mission, enemy, terrain, troops, time available, and civilians (METT-TC). All three were well resourced and challenging. Throughout the

entire exercise, the battalion sent out a tactical operations center (TOC), and a combat trains command post (CTCP) to provide command and control (C2) and logistics support. The first covered two back-to-back, 5-day iterations, where all four tasks were trained in each 5-day period. The second exercise in April began with a 180-mile road march (complete with the Stryker's add-on armor) and went into a 3-day FTX where we conducted a raid and security operations in a stabilized environment (SOSE).

The final FTX in May was the most challenging — a continuous 7-day exercise that closely resembled the 9-day iterations of the IOT&E. The OPFOR was ramped up from one rifle company, augmented with a platoon of light armored vehicle (LAV) IIIs and high-mobility multipurpose wheeled vehicle (HMMWV) gun trucks, to two rifle companies with a full complement of LAV IIIs, organic mortars, and a U.S. Army National Guard M1A1 tank platoon.

At times, my task organization included the battalion's engineer platoon (with its engineer squad vehicles) from the 73d Engineer Company, and the antitank platoon, with the Stryker ATGM variant, from 1st Platoon, D 52d Antitank Company. The battalion's reconnaissance platoon, mortar platoon, and sniper section supported the company operations. Company battlespace varied — at times it was 25 to 30 kilometers.

Key Differences

Understanding the SBCT structure is critical to understanding how it is employed. By leveraging technology, SBCT leaders can do more with less. At first glance, a robust 170-man company with all the elements of combined arms by modification table of organization and equipment (MTOE) standards would appear to be the answer to every tactical problem faced by a company commander. Because an SBCT unit can do more, it is

tasked to do more. In fact, between the digital technologies in the form of the Force XXI Battle Command Brigade and Below (FBCB2), the mobility provided by the Strykers, and the numbers and types of soldiers, an SBCT unit probably covers three to four times the battlespace of any other type of company. Battalion and brigade commanders have remarked that an SBCT company commander's job duties are more similar to those of a battalion commander than those of a company commander in our current force units.

This creates a "one-floor-up" profile for leaders in the SBCT. Platoon leaders now make many decisions and have access to assets that before were only available to the company commander. This carries over to every level, right down to the new soldier who is now both a rifleman and squad designated marksman (SDM) on alpha team, or a rifleman and Javelin gunner on bravo team. The agile and adaptive leader who leverages the available technology makes the SBCT work. For example, the population of the FBCB2 of confirmed enemy allows the company commander to focus combat power at the decisive point within a large battlespace. The commander does not have to own every inch of the 25 kilometers he is assigned by the battalion commander; he just has to influence the bulk of it while he dominates the key terrain as determined by METT-TC.

The ability to task organize at lower levels to accomplish specific tasks is another SBCT distinction. Because the SBCT rifle companies are organically a combined-arms unit and most SBCT vehicles have a common command and control platform in the FBCB2, habitual relationships come easier and work better. An

example would be task organizing the mobile gun system (MGS) platoon to accomplish route clearance. The current interim MGS platoon consists of three ATGM ILOVs and 12 19Ks. A typical task organization for route clearance would be two ATGMs with a section of infantry, including the rifle platoon sergeant and forward observer, and a sapper squad in the engineer squad vehicle under the MGS platoon leader. The remaining ATGMs, with the platoon sergeant, are attached to the rifle platoon under the rifle platoon leader. The company now has four maneuver elements with the required combat power to accomplish their tasks.

Another example would be the quick reaction force (QRF). During security operations, three platoons are typically given tasks, which develop the area for decisive operations. One platoon is held back as the QRF to be the decisive effort. The other platoons may be escorting logistics, manning traffic control points, or executing an ambush or hasty attack, but the QRF platoon is positioned centrally and kept on a short string to be decisive. The mobility of the Stryker and the situational awareness (SA) provided by the FBCB2 allow it to move quickly to a dominating position and be decisive. Understanding how SBCT leaders leverage digital C2 and Stryker mobility are key to understanding how the SBCT units conduct full-spectrum operations across a large battlespace.

Raids and Attacks

The flexibility of the Stryker rifle company in the offense is built into its organization. The Stryker rifle company's offen-



"The flexibility of the Stryker rifle company in the offense is built into its organization. The Stryker rifle company's offensive mission capabilities are extremely diverse and lethal and include 20 various types of Strykers, organic combat multipliers, such as an MTOE sniper team, a fire support team (FIST), company mortars that have both the 120mm and 60mm systems, the MGS (we have the ATGM ILOV), a C2 architecture that includes FBCB2, amplified vehicle radio communications, all-source imagery processors, multiband integrated tactical radio systems, and the ability to field full platoons, complete with full weapons squads (1 Javelin and 1 SDM per rifle squad), to conduct dismounted operations."

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Using the Stryker rifle company's flexibility, we conducted seven successful variations of raids and attacks. Below are three of the seven operations that highlight the organization's flexibility and its use of the Stryker to complete the mission.

Military Operations in Urban Terrain (MOUT) Raid

The first operation was against the town of Regenber, one of the MOUT sites at Fort Lewis. The enemy situation revealed OPFOR leaders meeting to discuss future operations. They had about a platoon-sized OPFOR local security with a mounted reinforcement (2 to 3 tech vehicles) 15 minutes away. Variables included civilians on the battlefield (COB) and a booby-trapped arms cache that had to be located. The town sat down in a bowl, which made using vehicles difficult, as surprise was critical to keep the OPFOR leaders from fleeing. Rules of engagement prevented the use mortars larger than 81mm, as well as crater-producing or incendiary munitions. To limit collateral damage from over penetration, a direction of attack was chosen that kept fires oriented south and away from the majority of the COBs.

The company scheme of maneuver relied on a dismounted infiltration to achieve surprise and fix the enemy on the objective (OBJ), then bring up the vehicles to set up blocking positions, assist in clearing the OBJ, augment security, and escort casualty evacuation (CASEVAC). The concept called for the sniper team to conduct a route recon from the planned dismount point, about 700 meters away from the OBJ, then maintain eyes on the support by fire (SBF) and assault positions with a two-man element, while the third man would linkup with the main body to act as a guide. The MGS platoon leader was in charge of the vehicles once we dismounted, and the engineer platoon would clear the route into the OBJ after we initiated contact at the assault position.

One rifle platoon was the SBF and they provided the company with freedom of maneuver. An additional weapons squad augmented the SBF, which was the mortar section using hand-held 60mm tubes with 10 rounds of ammunition each. The SBF was also tasked to dismount two M2s and bring in 2,000 rounds. Once the SBF initiated fires, the sniper team would set in on the open flank of the SBF to provide precision fires and isolate the OBJ. The other two rifle platoons would clear the OBJ (a series of six target buildings), then clear according to enemy situation. Building numbers and streets provided control measures and platoons cleared building by building, which is how most units clear the objective.

During the attack, the javelin gunner used the command launch unit to provide reconnaissance and surveillance; an SDM equipped with an M4, who was trained at the brigade SDM course, acted as a counter-sniper; once the route had been cleared, we linked up with and used infantry combat vehicles (with their remote weapons system M2s and MK-19s) to destroy fortified positions; and we used MGS platoon sergeants to employ the modified improved TOW acquisition system (MITAS) thermals of the ATGM to look deeper into the OBJ and provide information on OPFOR and COB activities once the route had been opened.

These are just a few of the tactics, techniques, and procedures (TTP) used during the operation.

Consolidation and Reorganization

Once the OBJ was secured, we were given a fragmentary order (FRAGO) to continue our consolidation and reorganization, but not to pull off the OBJ as planned until nongovernment organizations (NGOs) could be brought in. The first sergeant switched from providing reports from the SBF to managing CASEVAC. A medical platoon medical evacuation vehicle (MEV) and a family of medium tactical vehicles (FMTV) were used to evacuate 22 casualties and a section of infantry combat vehicles (ICVs) provided the escort.

The CASEVAC used the breach made by the sappers to get the vehicles on the OBJ. The XO, who had been talking with battalion and updating the common operational picture (COP) on his FBCB2, immediately began working logistics resupply and maintenance evacuation. A senior platoon sergeant was tasked to take charge of the company's perimeter security until the first sergeant completed CASEVAC operations. A platoon leader worked the COBs and enemy prisoners of war.

Hasty Attack Against Tanks

Another attack allowed for much greater integration of the vehicles. After a 24-hour defense, the company received a FRAGO to conduct a hasty attack against a combat security observation point consisting of a tank platoon and two squads of infantry that were holding a bridge 5 kilometers (km) away. The OBJ included a rectangular drop zone (DZ) bordered by a lake on the left flank (east), a bridge and a stream on the south side, a railroad track on the west (also the right boundary), and a hardball road served as the battalion's line of departure and as our unit's probable line of deployment (PLD). The DZ was about 2.5km in length by 1.5km in width. There was a centerline road in the DZ, which served as a platoon boundary. The OPFOR was using its rifle squads on its flanks as observation and listening posts to control the two tank sections' fires and as local security. One tank attacked my infantry with coax and M2 fires while the other used main guns against Strykers.

Company scheme of maneuver called for two platoons attacking abreast, augmented by the MGS (ATGM ILOV) to clear the OBJ. One platoon would receive two ATGMs; the other would receive the sniper team and a dismounted 60mm. The third rifle platoon was the finishing force (follow and support) and would move to a flank of either platoon as needed. We had battalion mortar priority of fire (POF) with 120mm and 81mms.

TTP Against Armor

A TTP we used at the platoon level was dismounted infantry clearing forward while overwatched by their ICVs and the ATGMs. When the dismounted element reached a prominent IV line, they would establish an overwatch with their javelins then bring the vehicles forward. This worked well, in that the javelins and the ATGMs provided redundant antitank coverage and freed up the ICVs to provide heavy weapons fire for squads and platoons when they made contact with the OPFOR infantry. When this TTP was used, the OPFOR infantry was quickly killed. The mobility and firepower of the ICV with its remote weapons station controlled by the squad leader on the ground fixed and finished the enemy before he could reposition.

In retrospect, the MGS platoon should not have been tasked down to the platoons in this instance. The platoon leaders' span of control, with squads dismounted from their vehicles and controlling the javelins, was about as much as they could handle.

“Throughout all of the defenses, the vehicles’ capability to pick up and move forces to the decisive point at every level, our heavy weapons’ lethality, antitank systems, and mortars, along with the C2 provided by the FBCB2, allowed decisions to be made that enabled us to operate in large battlespaces and retain the initiative. The enemy’s situation was transparent, as long as we retained the flexibility to move within the depth of the battlespace.”



The company would have been better served if the MGS had been tasked to provide overwatch to prevent the enemy from employing its tanks. That would have given the MGS platoon leader room to exercise initiative, reduced the C2 burden on the rifle platoon leaders, and allowed greater survivability and effectiveness on the part of the MGS.

Raid Against Brownsville

During the final FTX, the battalion used an 11-building live fire MOUT site as part of its area of operations for force on force. Brownsville (Range 31 at Fort Lewis) is a plywood-constructed town built in a reasonably open area, similar to a bowling alley. Its buildings vary, some have two stories with stairs or ladders, and others are one-story modulars with walls separating spaces similar to a strip mall. The rear of the town abuts the small-arms impact area. There is a centerline road that runs the long axis of the town that we used as a platoon boundary, and two roads that cross the short axis were used as phase lines. The centerline road had a point obstacle consisting of wire and mines.

During this raid, the speed of the vehicles was used to take advantage of the terrain. The antitank threat was negligible given the vehicles’ add-on armor (a kit of reactive armor that gives the Stryker protection up to rocket-propelled-grenade level), the situation template, and the scheme of maneuver. Initially the MGS established an SBF at about 600 meters outside the OBJ, with a squad of infantry providing its local security. The fire support officer (FSO) and XO located with the MGS. Two rifle platoons nearly simultaneously attacked the two nearest buildings on either side of the centerline road. The road served as the direct fire control measure. As the platoons passed the MGS SBF, the MGS went into an observation mode. The engineer platoon (-) then went to work on the point obstacle that had to be breached to bring in logistics. The obstacle was about 300 meters from the OBJ, but the enemy’s focus was no longer on the breach. The third rifle platoon was committed to reinforce success on the

right flank. Snipers were attached to that platoon to act as counter-snipers.

The OPFOR was quickly overwhelmed by the two-directional attack. Many were shot from behind as they concentrated on the threat across the street. Using remote weapons system (RWS) thermals and weapons systems to provide accurate M2 fires and intelligence to the platoon leader worked great. Casualties were quickly pulled back to the platoon casualty collection point (CCP) in the rear of vehicles and treated until the company CCP was established. A platoon-sized OPFOR, with one M2 mounted on a visual modification (VISMOD), two medium machine guns, and three rocket-propelled grenades (RPGs) were destroyed and the OBJ cleared in 20 minutes. The Stryker’s speed, mobility, protection, and firepower were put to good use based on METT-TC.

Perimeter Defense

The perimeter defense task really applies itself to the noncontiguous battlespace in which the SBCT operates. The lines of communication are often long and must be cleared or maintained. Restrictive terrain may further affect lines of communications. Adjacent unit relationships are more digital than physical. The mobility and firepower of the SBCT company allow it to take on a larger area of operation (AO).

Out of the five defenses we executed, the major condition differences were time, enemy, and terrain. During one defense, we had about 3 hours to conduct a hasty defense following an attack against two motorized infantry companies that had LAV IIIs and HMMWV VISMOS. While we were preparing the defense, we were also conducting CASEVAC, rearming, and refueling operations. Another defense had platoons operating out of contact with one another in restrictive terrain. This was more of a nodal defense of key intersections where traffic control points were further developed as the priority intelligence requirements

were answered by the S2. Another had the company defending a 9-kilometer sector, with an engineer platoon and an antitank platoon attached. The enemy included a platoon of T-80s (replicated by M1A1s), eight BTRs (LAV IIIs), and two 150-man companies with organic mortars and artillery fire support.

Hasty Defense of a Flight Landing Strip

The hasty defense mission (3 hours preparation) of a flight landing strip (FLS) required simplicity to allow maximum planning and rehearsal at the platoon level. A rifle platoon was tasked to delay on either flank. The MGS platoon was tasked to destroy in the center, and the third rifle platoon was tasked to counterattack into a flank once the enemy main effort was determined. The engineer platoon would become the company reserve on completion of the obstacles. They were eventually used to reinforce a rifle platoon. Limited success here — the enemy bypass was contained, but most of the sappers were lost. After this lesson-learned experience, during the defense in sector that followed a few days later, we set a battle position overwatching a ford site in the rear of our sector, which worked great.

Small engagement areas, ambushes, and local counterattacks marked the FLS defense. Here the mobility of the Stryker to move soldiers and equipment kept the enemy from taking advantage of any potential successes. The FBCB2 allowed me to gain and maintain SA, then develop situational understanding and move the appropriate element to where it was needed. An example of the usefulness of FBCB2 is the linkup with the battalion reserve. About midway through the fight, the battalion reserve antitank platoon linked up with me via FBCB2, which allowed me to send graphics over 20kms of terrain hours earlier. With the battalion reserve, we killed the remaining vehicles and the enemy withdrew.

Defense TTP

Throughout all of the defenses, the vehicles' capability to pick up and move forces to the decisive point at every level, our heavy weapons' lethality, antitank systems, and mortars, along with the C2 provided by the FBCB2, allowed decisions to be made that enabled us to operate in large battlespaces and retain the initiative. The enemy's situation was transparent, as long as we retained the flexibility to move within the depth of the battlespace.

Security Operations

In an AO, it is the company commander's responsibility to secure the area. It may also include securing a higher headquarters' key assets, such as a retrans site or escorting nongovernment officials, or managing a string of traffic control points that support a larger battalion or brigade collection plan. The company commander is tasked with grasping and retaining the initiative within an AO that may be up to 12 or more square kilometers and include urban areas. He is required to do some staff work, put on his red hat, make decisions, and start figuring out what the enemy wants to do in his AO then get out in front of him.

The sequence of events starts with a recon of the AO, then movement into the AO, then finding, fixing, and finishing the enemy while sustaining operations and facilitating higher headquarters' objectives. The company commander is allowed to execute great initiative within the higher commander's intent, as opportunities are often time sensitive. Operations take on the tune of distributed platoon operations, with one platoon being the decisive effort at the time, but based on events quickly shifting to a supporting role, or vice-versa.

An example would be a platoon conducting a presence patrol with a brigade human intelligence (HUMINT) asset. They receive information that an OPFOR resupply will come into the AO from the east between 2400 hours and 0200 hours. The commander calls the battalion commander and informs him of his intent to establish an area ambush to destroy the resupply. The battalion commander calls brigade and requests ground surveillance radar and I-REMBAS (a device capable of picking up acoustical signatures) support. Another platoon conducts its troop leading procedures (TLPs) for the ambush while the platoon that conducted the patrol finishes its route (turns over responsibility for the town to the sniper team) and links up with the logistics package (LOGPAC) at the combat trains command post (CTCP). Another platoon conducts the ambush and destroys it, but turns up the grid location and linkup time for the enemy resupply site. It is now 0130 hours and undoubtedly the enemy logistics site will fold and withdraw, an opportunity exists. The QRF platoon is now tasked to conduct a hasty attack. The MGS platoon, task organized with an infantry squad, a sapper squad, and an MEV, are tasked to standby with the first sergeant for CASEVAC. Mortar POFs shifted all day. This cycle continues throughout the security operation as events dictate.

In some ways security operations resemble a search and attack; however, it is a full-spectrum task. It requires agile and adaptive leaders executing their current task and purpose, but who understand the commander's intent and recognize opportunities that appear, then self retask to meet the intent.

Continuous Operations

Throughout the FTX, the pressure of continuous operations was felt. The battalion commander made a conscious decision to operate in contemporary operating environment conditions. Attacks and defenses were executed hot on the heels of one another among the consolidation and reorganization. Almost every attack and defense we prepared for was done in the midst of a security mission. As the battalion commander's critical information requirements (CCIR) were answered, the battalion shifted its decisive effort based on the current situation and conditions. As we grew accustomed to this sustained operating tempo (OP-TEMPO) and fell into a battle rhythm, our operations fell into step with the battalion's. Standard operating procedures were developed at the lowest levels to compensate for the condensed planning time.

Company TLPs were refined. I pushed out the battalion FRA-GOs via FBCB2 with a free-text warning order with company-specific information. I contacted the battalion commander to receive his guidance, issued the next FRAGO within the hour, accompanied by a company set of digital graphics that I could push to everyone in the battalion. I had a conference call with my leaders, sent out my reconnaissance, arranged for company leaders to assemble for a face-to-face and rehearsals then began movement. The eight TLPs did not change, but the methods and speed in which they were executed did to keep pace with constraints. Throughout our mission, the digitally enhanced field manual and the mobility of the Strykers allowed us to meet imposed constraints.

TTPs for Employing Company Assets

Using the fire support platoon:

- *MTOE FSO and FIST*. Works great as your S2 during rehearsals — can move red icons on FBCB2; is the fire support platoon leader and targeting officer; and can be tasked as your nonlethal guy, if you receive brigade assets, such as HUMINT,

psychological operations, and civil affairs. The FSV is probably your company's best C2 platform; it has a ground-lasing device (GLVD), but currently the 120mm has no precision-guided munitions (PGM) round; however, it does provide a control for 155 copperheads and close air support (CAS) laser-guided munitions, and aids in target registration. You will need a company fires net — organic forward observers (FOs), better C2 platforms, ATGM laser ranger finders, and 120mms at the company level mean a lot more fire missions.

- **Mortars.** The arms room concept for mortars provides a huge plus in flexibility, such as ROE, effects, better white phosphorous, and increased range to cover Stryker battlespace. During one defense, we set up 60mms for a platoon in restricted terrain with danger close obstacles, and set up the 120mms to cover our tactical obstacles in the more open areas. The 10-man mortar section can provide more of their own security as the mortar combat vehicle (MCV) has an RWS with an M2.

- **Sniper team.** The sniper team can be used as part of your leader's recon, and as the security element to keep eyes on the OBJ. They can be used as an economy of force on a flank, key node or rear area that you do not want to use a platoon in yet; used as an overwatch or countersniper role; used to augment the SBF; attached to a platoon for platoon missions; used as FOs or to infiltrate a COLT team made up of organic platoon FOs with the GLLVD. Our sniper team used a HMMWV from headquarters for better comms and mobility. They can also be inserted with battalion recon platoons to facilitate adjacent unit coordination. Insert early to provide reconnaissance, surveillance, and target acquisition (RSTA) over company FM net in terms of last minute target refinement and/or security information during infiltration of other company elements; and they can eliminate key enemy weapons or personnel immediately prior to the assault and force the enemy to consider another direction.

Using the MGS (ATGM ILOV):

When using the MGS (ATGM ILOV) be conscious of the local security requirements. The ATGM ILOV is another C2 element you can use — task organize with sappers or infantry to do route clearance. The vehicle has great thermals for reconnaissance and surveillance and battle damage assessment. The laser range finder generates quick calls for fire. Tube-launched, optically tracked, wire guided (TOW) II A&B, TOW BB (bunker buster) missiles and MITAS provide excellent long-range precision fires against a wide variety of targets, including bunkers, armor, and snipers. The ATGM ILOV is not the MGS; survivability in restricted terrain is an issue — no fire and forget with a wire guided missile, no coaxial machine gun. The ATGM has some pluses and negatives when compared to MGS requirements. It can be used at blocking positions to isolate from outer or inner rings during raids; it can be paired with snipers or javelins for AT ambushes, forward security/counterrecon fights; or paired with a rifle platoon as a hunter-killer combination.

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Using engineers:

Sappers have a javelin per platoon; the engineer squad vehicle (ESV) has RWS with an M2; sappers have M240s; ESV has plow or roller and a pneumatic dart-style marking system that works great day or night; ESV plow and roller greatly impact ESV mobility; when we set conditions for breaching out of contact, the sappers lived and our CASEVAC got through; and sappers can easily set a blocking position and set up a hasty defense — this prevented a penetration in one of the defenses.

Using FBCB2:

FBCB2 can be used to push out short FRAGOs and graphics; FBCB2 should augment a map with graphics, not replace it; and FBCB2 reporting for logistics and sensitive items frees up the FM nets and should be SOP — set free text messages at given times in accordance with battalion SOP. The company XO is responsible for updating the COP via FBCB2. He inputs FM reports into FBCB2, which keeps the FBCB2 from being overpopulated with redundant reports. FBCB2 allows for distributed operations over the SBCT battlespace.

Using other brigade assets:

During train up, the brigade was still fielding much of its equipment, conducting training, or supporting the 3d Brigade, 2d Infantry Division, at the combat training centers. Even with all of the enhanced capabilities of the SBCT infantry company and battalion, the brigade assets, such as RSTA troops with unmanned aerial vehicle platoons, will double their effectiveness by achieving the fundamentals of full-spectrum operations.

Logistics and resupply:

- **Escorts.** All logistics operations need to be escorted by at least an infantry section. LOGPAC should be organized so that classes of supply are lined up in the order that supplies are to be drawn; for example, III, I, V, VII, and IX. The XO or first sergeant should escort LOGPAC and control FM flow. FBCB2 personnel and logistics statistic SOPS are critical to avoid tying up FM nets. The longer the lines of communications through bad-guy country, the more combat power is necessary for escort.

- **Refueling operations.** Refueling operations are generally executed service-station style, one section at a time, either in the

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Aerial Insertions — Planning Considerations for the Brigade Reconnaissance Troop

by Captain Brian P. Stevens

During a recent brigade command and battle staff training (BCBST) seminar and warfighter exercise (WFX), the Brigade Reconnaissance Troop (BRT), 2d Brigade Combat Team (BCT), 49th Armor Division, Fort Worth, Texas, for the first time integrated the BRT into the BCT staff planning, coordination, and military decision-making process. The BCT had a unique perspective due to the recent influx of several soldiers assigned to the brigade staff and the BRT who have long-range surveillance (LRS) experience.

Air inserting elements of the BRT can have significant payoff for the BCT in both information collecting and fire support, but it requires detailed planning and coordination within the BCT and with the division to be successful.

As with all intelligence, surveillance, and reconnaissance (ISR) operations, one key to success is getting the plan out early enough in the planning cycle to allow the collecting units to adequately plan and coordinate their piece of the operation. After the BCT staff receives either warn-

ing order 3 or the complete operations order (OPORD) from division, they must quickly assess the feasibility and risk of air inserting BRT elements. This lesson was quickly learned during the BCT mission analysis of the division OPORD. It is imperative that brigade planners quickly analyze all relevant information and develop an ISR order or reconnaissance and surveillance (R&S) order for dissemination to all units in the BCT. Ideally, the ISR or R&S order should be completed by the time the BCT staff conducts the mission analysis briefing to the brigade commander and should be transmitted with brigade warning order 2 to give all elements in the BCT adequate planning and coordination time.

In addition to using mission, enemy, terrain, troops, time available, and civilians (METT-TC) to analyze the feasibility of conducting an air insertion, several other factors may have to be analyzed to determine if the payoff of conducting the air insertion will justify the risk. Each operation will have unique factors that must

be analyzed to determine if an air insertion of BRT elements is the best course of action. In this exercise, brigade planners identified several factors as being important to determining the feasibility and likelihood of success for conducting an air insertion.

Priority Intelligence Requirements

The priority intelligence requirements (PIR) developed as a result of the mission analysis must be broken into specific information requirements (SIR) that can be collected by the BRT observation posts (OPs). During the BCBST, the brigade was conducting a deliberate attack against a well-fortified defensive position. The PIR focused on the location of the battle positions, the obstacle belt, and a tank company reserve. These PIR were suitable for SIR that could be given to the BRT OPs. As part of intelligence preparation of the battlefield (IPB), ISR planners also looked at the terrain at and around the named areas of interest (NAIs) to determine if it would give the dismounted BRT teams a



high probability of success during both the insertion phase and the foot-movement phase. The mountainous terrain proved to be advantageous for masking insertion routes, as well as allowing maximum standoff and line of sight for the OPs.

Communications Capability

Communications capability was one of the major concerns from the outset, due to the relatively long distances between the potential OP sites and the BCT main body. The distance from the OP sites to the line of departure (LD) was approximately 18km and the distance from the LD to the BCT assembly area was approximately 13km. To ensure good communications across the distances needed, the BRT received operational control of a BCT retransmission (RETRANS) team. A BRT squad, the RETRANS team, and one scout section conducted a forward passage of lines (FPOL) through the division cavalry squadron and moved 2km forward of the LD at H-24 hours to RETRANS traffic from the OPs.



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- Decision to conduct air insertion, no later than H-50.
- Warning order to BRT and attachments, H-48.
- Simultaneous planning, coordination, and rehearsals, H-48 to 24.
- Air mission briefing (aircrews and scout teams), H-25.
- Insertion, H-24.
- Ground movement, H-24 to 12.
- Observations of NAIs, no later than H-12.

Enemy Situation

The current and projected enemy situation also played a significant role in deciding if an air insertion was feasible. During the BCT WFX scenario, the enemy situation was very well defined and was conducive to conducting surveillance on both the threat main battle area, as well as avenues of approach for the combined arms reserve.

Aviation Support

Due to the fact that the BCT will not normally have organic aviation lift assets to support air insertion, one of the most important considerations is aviation support availability. Based on the limited time available for mission planning, the assistant brigade S3 conducted initial mission analysis to backward plan the teams' tentative ground and air routes, from the objective area back to the assembly area. Once tentative helicopter landing zones

(HLZ) were selected, the assistant S3 conducted face-to-face coordination with the division S3 air to determine if sufficient aviation and artillery assets were available to support the deep insertion and SEAD mission. For this process to be effective, the brigade planner and the BRT commander must have a very good working relationship and a solid understanding of each other's capabilities, limitations, and tactical task and purpose. Using a common air mission-planning checklist that the brigade recon planner and the BRT commander jointly developed facilitated this process.

Additional Planning Considerations:

Task organization. Based on recommendations and lessons learned from several other units who had employed BRTs, 2d BCT task organized the combat observation and lasing team (COLT) platoon of the direct support artillery battalion into the troop. This technique again proved to be very effective due to the added capability and improved synchronization with the direct support artillery battalion. In addition to the COLT elements, the BRT received operational control of one engineer reconnaissance team (ERT) and four ground surveillance radar (GSR) teams. Based on the PIR, the task organization built during course of action development includes two teams with a mix of scout, COLT, ERT, and GSR personnel. One team would be inserted on each side of the objective area. Once inserted, each team would deploy into three OPs that



"Once tentative helicopter landing zones (HLZ) were selected, the assistant S3 conducted face-to-face coordination with the division S3 air to determine if sufficient aviation and artillery assets were available to support the deep insertion and SEAD mission. For this process to be effective, the brigade planner and the BRT commander must have a very good working relationship and a solid understanding of each other's capabilities, limitations, and tactical task and purpose."

were focused on their PIR and NAI/TAI. This technique proved to be very effective by providing significant redundancy while still maintaining good control measures.

Command and control. Due to the fact that the division cavalry (CAV) squadron was screening along the LD and the BCT would not receive battle handover until the lead task forces conducted FPOL through the CAV, significant coordination was necessary with the CAV to ensure effective control and support of the deep deployed OPs. The TTP used was to initially collocate the BRT headquarters with the CAV tactical operations center (TOC) and give the CAV tactical control of all elements that were forward of the LD until the BCT received battle handover from the CAV. This allowed the BRT to maintain contact with the deep deployed OPs, the CAV elements in the area of operations, and the BCT headquarters element. Close coordination with the CAV ensured the best possible fire support and casualty evacuation contingency plans.

Evasion and Recovery Planning

One aspect of BCT deep operations that is often overlooked is contingency planning for recovery of deep deployed elements in the event they make contact in the air or on the ground, lose communication with higher headquarters, or ground forces are unable to conduct a rollover linkup operation. Any time teams are deployed forward of the line of departure/

contact, brigade planners must conduct the planning and coordination necessary to brief the deploying elements on the procedures employed to ensure they will be extracted by some method. In most cases, the most likely method of extraction for deployed BRT elements will be a rollover or linkup operations, but the ground tactical plan does not always progress as expected and planners should have alternate methods for extracting deployed teams.

In this scenario, brigade planners used the joint combat search and rescue (JCSAR) information in the daily air tasking order (ATO) to brief deploying teams on signaling and authentication procedures for the teams in the event that they had to conduct a ground evasion and recovery operation. Brigade planners also coordinated with the BRT command element for contact times, evasion corridors, and final evasion points for all deploying teams to ensure that all elements would eventually be recovered even if the ground tactical plan of the BCT main body failed to support a linkup with deployed teams. Using a jointly developed JCSAR planning checklist to ensure that all necessary information was rapidly disseminated to the BRT commander when coordination was complete also enhanced this process.

By employing an aggressive and deep ISR plan, the BCT attained a significant tactical advantage that contributed to its success during offensive operations. The

detailed planning and coordination that took place during the brigade military decisionmaking process ensured that the deep insertion was successful and effective. During the scenario, five out of six teams were effectively reporting and targeting throughout the battle. Early deployment and reporting allowed the S2 to pinpoint 90 percent of the threat's platoon-sized battle positions and 80 percent of the obstacle locations well before the lead task forces crossed the LD. This rapid, detailed, and accurate picture of the threat on the battlefield ensured that the commander had the information he needed to make timely decisions to accomplish the mission. The early and effective reporting also assisted all elements in the brigade in maintaining a common operational picture throughout the battle.



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Adjustments to the Task Force Scout Platoon

by Staff Sergeant Matthew Mayo

The task force scout platoon is a unique element within its parent unit. It is one of only two combat arms platoons in a headquarters company of 300 men. The platoon's chain of command can be confusing because it reports directly to the task force commander. Its mission task and purpose can be conflicted by differences between the S2 and S3 on what the scout platoon should be doing, which is compounded by the fact that scouts are usually already in zone or sector when these differences arise. These problems occur during maneuver training and wartime and are exacerbated by new demands placed on the platoon that are not addressed by doctrine.

Due to the number of personnel, vehicles, and overall quality of the 19D cavalry scout, the platoon is frequently called on to accomplish many nonstandard missions as well. Missions, such as combat patrols, one-section traffic control points, and inner urban reconnaissance, continue to put scouts in new and unfamiliar positions. On today's high-paced battlefield and tomorrow's battlefield of no boundaries, the breadth of possible missions continues to grow. The scout platoon needs to be the best equipped platoon in the battalion to handle all possible missions.

Vehicles

Task force scouts are currently equipped with either the M1114 up-armored high mobility, multipurpose wheeled vehicle (HMMWV) or the older, more vulnerable M1025/26 HMMWV. Once the 3d Infantry Division completed its transition from M3 cavalry fighting vehicle (CFV)-equipped battalion scout platoons to HMMWVs, the Army completed its swap from the most capable scout vehicle currently in inventory to a cheaper, more maintenance friendly, less capable platform. Some people, especially scouts never assigned to a CFV platoon, argue a HMMWV is more suited to scouting. The argument is a CFV is too big, too loud, and not maneuverable. A HMMWV, especially the turbocharged M1114, is also loud when trying to power through loose desert sand, Korean paddies, or European woods.

Wheeled vehicles will never negotiate terrain, ditches, or water obstacles that tracks can, and only the narrowest alleys make the difference between HMMWV and Bradley movement. What a Bradley CFV lacks in stealth it makes up in observation, firepower, and survivability. The M3A2 has three very effective, stabilized weap-

ons systems slaved to a thermal sight that is better than the sight on an M1A1. The M3A2ODS incorporates a laser range finder, on-board global positioning system, and an electronic compass with the integrated sight unit (ISU) to provide distance, direction, and 10-digit grids to targets for the most accurate spot reports and calls for fire. The M3A3 is capable of tracking two targets with its second-generation forward-looking infrared (FLIR) sight.

Task force scouts are beginning to field the long-range advanced scout surveillance system (LRAS3), but only three to a platoon, limiting task organization. The LRAS3 is a very effective optic, but its dismount capabilities exist only in the minds of the people who wrote the technical manual. Its bulk and weight make it very impractical for any extra-vehicular mission. This forces scouts to use the HMMWV to support the weight and energy requirements for the LRAS3, posing the problem of survivability. To make maximum use of its optics, the CFV- or LRAS3-equipped HMMWV must place itself in position to observe the enemy, which is never as safe as a pure-hide site. Once the vehicle has sacrificed some of its cover and/or concealment for observa-



The MK19 grenade launcher is a reliable weapon, but terrain dictates its effectiveness. The 40mm projectile requires 16 to 30 meters of flight to arm. This is not a problem in open terrain but becomes a serious one in the close confines of wooded terrain or urban streets. The scout platoon already has an answer for this, the M240B machine gun. The M240B can replace the MK19 as mission dictates.

tion, it has to be prepared to take a beating.

The M1025/26 can stop only the weakest of shrapnel and gets chewed up by 7.62mm (AK-47) fire. The M1114 is very effective at stopping 7.62mm, shrapnel, and even antipersonnel mines, but rocket-propelled grenades (RPGs), plentiful on all battlefields, slice straight through it. The M3 has at least 30mm direct-fire protection, stops shrapnel and antipersonnel mines, and prevents all but the luckiest RPG shots from penetrating the hull. It is also equipped with a fire-suppression system and a nuclear, biological, and chemical defense system; HMMWV's have neither. The 25mm Bushmaster cannon presents the enemy with a serious problem. The CFV can destroy any vehicle, up to a T-72, with its cannon and, as a last resort, can destroy the modern tank with its tube-launched, optically tracked, wire-guided (TOW) missiles. The HMMWV's unstabilized M2 .50-caliber machine gun or 40mm MK19 grenade launcher are capable, at best, of laying an effective suppressive fire while withdrawing. These examples are mainly defensive, but are only multiplied when weighing the platform's offensive capabilities.

Weapons

The current weapons selection and assignment could be adjusted. Task force platoons currently have five M2 .50-caliber machine gun trucks and five MK19 grenade launcher trucks. The .50 caliber is a tried-and-true weapon, but is very old. It is not uncommon to have guns produced for America's previous wars in service

today. You can only transplant so many new parts into an old receiver before it stops working. Scouts must be one of the first to field the Army's .50-caliber replacement.

The MK19 grenade launcher is a reliable weapon, but terrain dictates its effectiveness. The 40mm projectile requires 16 to 30 meters of flight to arm. This is not a problem in open terrain but becomes a serious one in the close confines of wooded terrain or urban streets. The scout platoon already has an answer for this, the M240B machine gun. The M240B can replace the MK19 as mission dictates. The solution would be even easier if scout trucks were equipped with the two-weapon turrets that infantry TOW companies have. These turrets would allow the MK19 and the M240B to be mounted 90 degrees from each other and require only a small spin of the turret to bring the proper weapon on the enemy, based on target and terrain.

The M249 squad automatic weapon (SAW), with collapsible stock and forehand pistol grip, should replace the other five M240Bs in the platoon. The M240B is an excellent firing weapon, but it is heavy, cumbersome, eats lots of ammunition, and requires a three-man crew to properly operate. Dismounted scouts carry a large variety and amount of equipment in what is normally a three-man patrol. There is not enough room left to carry the gun, tripod, and all the ammunition necessary to feed it, and three scouts cannot accomplish their mission and simultaneously be members of a three-man machine gun team. The SAW is a one-

man weapon, much lighter, easier to carry, uses smaller and lighter ammunition, yet can still produce fast, well aimed, sustained fire. This weapon should be assigned to a member of the section that always dismounts as part of battle drills, but not the section sergeant

because he should already be carrying the manpack.

Each truck should retain its M203 grenade launcher. This is an excellent weapon and great for dismounted operations. Each vehicle should be assigned an M9 pistol. The gunner is the primary means of security for the truck when the crew is mounted. In urban environments, the gunner may not have enough time or room to rotate and/or depress/elevate the weapons system. A quickly drawn pistol may do the job while limiting collateral damage.

Finally, the M4 is a vast improvement over the M16A2. The collapsible stock and rail system make it perfect for any mission and it should not be replaced by the M16A4.

Optics

Scouts are the eyes of the task force commander and must have the best equipment with which to see. In accordance with many current modified tables of organization and equipment (MTOE), platoons are only authorized 20 night vision goggles. This means someone goes without. The truck commander cannot command and control his section or squad if he cannot see past his hood. He should be equipped with the PVS14. This sight does not require that the head mount be constantly flipped up and down to see different things. By keeping one eye adjusted to the dark and one to the goggles, he can scan from map to plugger to terrain without time-consuming eye adjustment. The gunner also needs the PVS14. This will allow him to provide observa-

tion while the vehicle is moving, yet quickly place his other eye in the cup of his weapon sight or thermal. The driver needs the PVS7D. The delta model has a very clear picture and covers both eyes, preventing confusion between the dominant and nondominant eye.

The M240B should have PVS14 and M68 reflex sights. By mounting both of these on the rail system, you have created a sight with better observation and a deadlier aim than the current PVS4. The same can be done to the M249 SAW, if adopted. The TVS5 is a fairly good sight when mounted on the .50-caliber machine gun. It could be made better by mounting a PEQ2A infrared beam to the gun. The beam is far reaching and would make the TVS5/.50-caliber combination much deadlier. What is really needed and available is a thermal sight to mount and zero to the .50 caliber and MK19. A thermal would outperform any passive sight.

The LRAS3 is an excellent sight, but not practical to dismount. The TAS4B is easier to dismount but eats two batteries a night, is loud, and has limited range. The PVS6 mini-eyesafe laser infrared observation set (MELIOS) can only be used during the daylight, it does not "paint" targets and cannot provide an instant grid. The Army must provide scouts with a sight that is at least thermal capable of observing five kilometers, can laze targets, provide distance and direction, be wired to a GPS providing a 10-digit grid, and designate targets for copperhead rounds, all dismountable by one man while a second man carries the batteries.

Simple adjustments to be made — platoons need two pair of binoculars per truck, one for the gunner and one for the tank commander. The Army needs to invest in off-the-shelf binoculars equipped with an internal compass in millimeters, and have the millimeter reticle for indirect fire adjustment. These binoculars are available and affordable.

Communications

Scouts talk to more people on the battlefield than anyone else in the task force. Communications must be maintained with the task force tactical operations center (TOC) and fire support element (FSE), requiring the power amp. Coordination must be made with the brigade reconnaissance team, companies to the rear, and adjacent units. Platoon leaders and section leaders must command and control the elements that require the platoon net on every truck. Take away one radio for dismount operations, which should already be set up

in manpack configuration for hasty dismounting, and a section is left juggling nets, which leads to missed calls and incomplete information dissemination.

Scout platoons should already be equipped with 20 all-source imagery processor (ASIP)-model single-channel ground and air radio systems (SINCGARS); by adding 10 more, the scout comms problem can be solved. The section leader's truck should have three radios mounted, with two on power amp at all times, and a fourth radio always set up to dismount. This set up would allow constant long-range communications between platoon leaders and the TOC, a high-powered swing radio for the FSE or unit coordination, and two radios for the squad leader's truck to monitor the platoon net and command. The squad leader can keep the current configuration of two mounted radios for maneuver and use the section leader's truck when controlling the mounted element.

Squad communications must be addressed. By giving each soldier an earpiece and clip microphone, crew coordination needed for vehicle maneuver is provided without sacrificing the sense of hearing, which occurs when wearing a combat vehicle crewman helmet. This will also free up the platoon net by allowing section communications to occur on the headset at short range and improve the crew's situational awareness by monitoring communications between truck commanders. Dismount operations would benefit as well. The certainty of radio communications between dismounts is much better than "yelled" whispers and confused hand gestures in the dark.

Finally, in the realm of comms is the PSN11 GPS. This is a good piece of equipment. When wired to the vehicle's battery and connected to an antenna cable, it cannot be beat. The problem occurs from mounting and dismounting the precision lightweight global positioning system receiver (PLGR) repeatedly during operations. The PSN11 should remain wired to the vehicle while each section uses civilian model GPS trackers for dismounted operations. These are lighter, smaller, and use lighter, smaller batteries. Many scouts have their own for field use, which should tell the Army something about necessary equipment.

Personnel Manning

Thirty men spread across 10 trucks is not enough manpower to safely and securely accomplish the mission. Doctrine recommends three vehicle sections for dis-

mount operations; but the reality is the task force sees four maneuver sections and then assigns four area recons or named areas of interest to observe. If you add eight more scouts, one per maneuver truck, then the section can put a soldier behind the wheel and gun of each truck, the squad leader can control the mounted element, and the section leader and the remaining two scouts can successfully execute patrols, area recons, and long duration operations. The extra soldier also provides local security during short halts.

The scout platoon is a separate maneuver element belonging to the battalion commander. The scout platoon should be authorized a medic and mechanic to the headquarters section just as are line companies. Medical evacuation and maintenance are two areas that can be problematic for the platoon due to the scout's mission and placement on the battlefield. The advantage these two soldiers would provide is obvious.

Perhaps the best way to equip scouts is to use the infantry branch as a guide. Scout training and missions are far more closely related to infantry than armor. Most of the scout's equipment proponent is the infantry branch. Even the Bradley fighting vehicle, the most armor an armored cavalry scout will find himself in, belongs to the infantry branch. The scout's mission of going deep in small teams, with a hand mike as his only lifeline, is similar to long-range surveillance teams. By looking at the MTOE of infantry reconnaissance elements, the focus can again become dismount intensive and provide scouts with the latest and greatest soldier equipment. It's time scouts were given the equipment they need to ensure the task force's current and future success on the battlefield.



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Armor and Future Urban Warfare

by Professor Richard M. Ogorkiewicz

U.S. Army Field Manual 17-10, published in 1942 in the middle of World War II, stated that, "Armored units avoid defended towns and cities." This view has been widely accepted and was reinforced 53 years later by the fate of Russia's armor, who in January 1995, ventured into the Chechen capital of Grozny and lost 105 of its 120 tanks and other armored vehicles.

The Grozny debacle can be ascribed to incompetence, but armor ran into trouble in urban environments on other occasions as well. One of them was the attempt by Israel's armor to seize the Red Sea port of Suez toward the end of the 1973 Yom Kippur War, which was repulsed by its Egyptian defenders. Such events tended to confirm the prevailing view that urban operations were not for armor but were strictly the domain of dismounted troops.

However, historical analysis shows that using tanks significantly reduced infantry casualties in the urban operations conducted in Western Europe in the latter part of World War II. Since then, tanks played an important role in the U.S. Armed Forces recapturing Seoul from the North Koreans in 1950, and in clearing the North Vietnamese out of Hue in 1968. Israeli armor also played an effective role in the siege of Beirut in 1982. Much more recently, of course, U.S. tanks led in the capture of Baghdad and British tanks in the capture of Basra.

Armor clearly makes an important contribution to successful urban operations

and should therefore be prepared to play a major role in them. Moreover, even if armor wanted to, it could not avoid towns and cities because of the growing urbanization of the world. More than one half of Western Europe is already urbanized and there is massive urbanizing elsewhere, particularly in the developing countries. As a result, almost half of the world's population is said to reside in urban areas.

The Need to Adapt

To operate in future urban environments, armor will have to adapt its equipment to urban conditions, as it has already done in other cases. For example, during World War I, the original tanks were adapted to the barbed-wire obstacles and trench defenses of the contemporary battlefield. Armor also adapted to the very different conditions of mobile combat in open terrain against hostile armored forces. In the latter part of World War II, a part of British armor adapted to yet another situation created by the need to attack fortifications and other defenses in northwestern Europe, which led to forming a division of specialized armored vehicles, the 79th Armored.

Adapting to urban operations is likely to have an impact on all aspects of future close-combat platforms, from firepower and protection to mobility.

Changes in Armament

As far as firepower is concerned, the most obvious change is the decreased require-

ment to engage hostile armor at long range with armor-piercing, fin-stabilized discarding sabot (APFSDS) rounds. Instead, the emphasis is likely to be on the use of high explosive (HE) ammunition, including high explosive squash head (HESH) or high explosive plastic (HEP). HESH was invented in England during World War II specifically for use against concrete fortifications, and although it has also been used successfully against tanks, it remains a particularly effective type of ammunition against buildings. Inert squash head ammunition would also be useful for punching holes in walls with minimal collateral damage. In other, less constrained circumstances, combat vehicles might also be expected to use thermobaric ammunition, which creates considerably more blast than conventional explosives and is particularly effective against enemy troops inside buildings and bunkers.

Guns mounted in combat vehicles could well retain the prevailing 120mm caliber, but should be provided with more depression to avoid the situation that faced Russian tankers in Chechnya when they could not return fire coming from basements of buildings because the depression of their guns was only four degrees. Guns would also need more elevation so that they could be used to engage targets behind buildings by indirect fire. The experience of Israeli armor in the 1973 Yom Kippur War has already brought out the need for an indirect fire capability and has led to installing 60mm mortars in Merkava tanks.

Their value was shown 9 years later in the 1982 operations in Beirut where they were found to be more effective than the tanks' high velocity guns on occasions.

The Swiss RUAG defense research organization demonstrated a possible alternative approach by installing a 120mm tank gun in an M109 in place of its 155-mm gun howitzer, converting it into an indirect as well as direct fire weapon. The practicality of developing such a dual weapon is further indicated by the fact that the HE projectiles fired by the 120mm gun of the Swedish Leopard 2 tanks is basically the same as the HE mortar bombs of the 120mm Stryx mortar. However, 120mm tank guns are impractical because their long tubes make turrets difficult to traverse in urban environments. These long tubes are not essential in urban environments because they are needed only to generate high-muzzle velocities for APFSDS projectiles. In view of this, 120mm gun mortars with shorter tubes could well be a more practical alternative and Russians have been developing them for some time.

As a direct result of their experience in Chechnya, the Russians have built prototypes of a new close combat platform —

a heavily armored automatic weapon vehicle. The Russians call it a "tank support combat vehicle" and describe its function as that of neutralizing hostile infantry. The development of this vehicle, designated BMPT, was preceded by the appearance in 1997 of the BTR-T heavy armored personnel carrier (APC), modeled after the T-55 tank chassis with which BMPT is often confused. The BTR-T constituted yet another misguided attempt to combine the functions of a weapons platform with those of a personnel carrier, which resulted in it carrying five dismounts, armament, and crew.

In contrast, the BMPT is designed exclusively for mounted combat. It is also based on a tank chassis, but that of the T-72 with add-on explosive reactive armor that brings its combat-loaded weight to 51.7 U.S. tons. In place of the T-72's 125-mm gun turret, it has a two-man low-profile pancake turret, originally fitted with an externally mounted 30mm automatic cannon, such as the BTR-T. However, the second version of BMPT has two 30mm cannons, as well as a coaxial 7.62mm machine gun and four launchers of Ataka (AT-9) antitank guided missiles. In addition,

there are two forward-facing 30mm automatic grenade launchers, each operated by a gunner located on either side of the driver.

The 30mm cannons have an elevation of 45 degrees, which makes it possible to fire at upper floors and rooftops of buildings as well as other targets. This would make up for the limited elevation of tank guns for which the Russians tried to compensate in Grozny by using ZSU-23-4 self-propelled quadruple 23mm air-defense cannons.

Protection Alternatives

Not unlike their armament, the protection needed by combat vehicles in urban operations is bound to differ from that of existing vehicles, which were designed for mobile warfare in open terrain. One of the reasons for this is they are less likely to be exposed to attack by large caliber kinetic energy projectiles, which are the major threat in mobile warfare. Instead, the predominant threat will come from short-range, shoulder-fired, shaped charge weapons, as has already happened in Iraq.

Moreover, the threat will come from all directions, whereas the protection of ex-

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"To be protected against RPGs, all combat vehicles would have to be fitted with more armor, but adding standard armor would significantly increase their weight. As it is, an M1A2 weighs 69.5 tons and the British Challenger 2 weighs 68.9 tons. Unfortunately, there are few alternatives to this kind of armor."



isting combat vehicles has been designed primarily against attack within their frontal arc. In fact, only the Israeli Merkava is well protected against rear attack and has no vulnerable engine deck.

Where it has been applied, the armor of existing tanks has proved highly effective against contemporary short-range anti-tank weapons, as was demonstrated by U.S. and British tanks in Iraq. For example, one British Challenger 2 tank survived eight rocket-propelled grenades (RPGs). However, the RPGs used so far have been generally of the original type and have only half the armor penetration capability of the latest versions. To be protected against RPGs, all combat vehicles would have to be fitted with more armor, but adding standard armor would significantly increase their weight. As it is, an M1A2 weighs 69.5 tons and the British Challenger 2 weighs 68.9 tons. Unfortunately, there are few alternatives to this kind of armor.

One alternative is explosive reactive armor (ERA), which can be three to nine times as effective, in relation to its weight, as steel armor against shaped charge weapons. As a result, ERA can provide

protection against RPG-7s, even for vehicles up to 20 tons.

Although the use of ERA was pioneered by Israeli armor, its principal exponents have been the Russians. They have not only adopted ERA on a large scale but have been developing it further. This has resulted in Contact 5 ERA, which is effective not only against shaped charge jets, but also against long-rod kinetic energy projectiles. More recently, they have developed Relikt ERA that is claimed to be even more effective, and have followed it with two more generations of ERA.

As effective as it might be, using ERA is open to the very serious objection that it constitutes a danger to dismounted troops. It does so especially in urban operations where it can be a danger to civilians who might be present — particularly in peace enforcement operations.

A potential and much safer alternative to ERA, which is currently being developed, is electric or, more precisely, electromagnetic (EM) armor. The United Kingdom's Defence Science and Technology Laboratory has already demonstrated that EM armor could protect a vehicle of about 20

tons against RPG-7s. However, it remains to be seen whether EM armor will be equally effective against other threats.

Much hope is pinned on the development of active protection systems (APS), particularly for protecting future combat systems platforms. Following the lead established by the former Soviet army during the 1980s with the Drozd system, APS are now being developed by the U.S. Army, as well as French, German, and other armies. However, they are being developed for use in open terrain, rather than urban operations, and may not be equally effective or acceptable in the latter. For example, in the early 1990s, the French Eirel and Russian Shtora APS were introduced; however, "soft kill" attacking missiles by electronic spoofing may not be effective in urban environments because of their short ranges and short reaction times. Other APS, such as the Russian Drozd, or the much more recent French SPATEM and German AWISS, which kill missiles by firing fragmentation grenades or rockets, are open to the same objections in urban environments as ERA.

Ultimately, the most effective form of protection might be provided by APS in-

corporating laser-based directed energy weapons as countermeasures. A model for this exists in the directable infrared countermeasures (DIRCM), which is already used to protect aircraft against missiles and have been successfully tested by the U.S. Army on a ground platform. But even if APS are used, combat vehicles will still need sufficient conventional armor to absorb the impact of disabled or shattered missiles, which light armored vehicles of 20 tons or less might not have.

Mobility Issues

Mobility's contribution to the survivability of combat vehicles is likely to be considerably less in urban environments than in open terrain. It remains important for vehicles to be agile and have the ability to accelerate rapidly. But sustained high speeds and advanced active suspension systems, which are being developed, are going to be of little value.

As the importance of mobility is reduced, the case for employing wheeled

vehicles in urban environments becomes weaker. The principal argument against employing wheeled vehicles, except in peacekeeping operations, is that they are bound to be more vulnerable than tracked vehicles. This is primarily because they cannot weigh much more than 20-odd tons, and therefore, cannot have much added protection unless they are fitted with ERA or APS. To some extent, it is also due to the inherent vulnerability of their tires, even to sniper fire.

Light tracked vehicles are also vulnerable, of course, but at least their conventional, pin-jointed metal tracks are not as vulnerable as tires. Moreover, the running gear of tracked vehicles is easier to protect, which should be done in both cases, to reduce the risk of mobility kills because immobilized vehicles become very vulnerable during urban combat. Using rubber band tracks, which are currently enjoying a worldwide revival of popularity, would reduce the vulnerability of wheeled vehicles. Their lighter weight

makes them more attractive and acceptable for peacekeeping operations because they cause less damage to roads; however, they are more vulnerable to damage caused by, among other things, sharp-edged concrete rubble.

This article implies a number of changes that need to be considered if armor is to adapt successfully to future urban operations.



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Stryker Rifle Company from Page 15

center of the company's tactical assembly area (TAA) or on a side road with cover and concealment and a two-way exit during tactical operations where the company is spread out. The lead platoon secures the site until the last platoon can relieve in place, bottom line is security is paramount. This procedure takes about 2 hours from time of receipt of fueler.

- *Treat all logistics missions like combat missions.* Have a fire support plan, conduct an intel brief, and rehearse actions on contact. Ground lines of communications to the infantry companies are the primary mode.

TAA procedures/TTP:

- *TAA Procedures.* Quartering party — first sergeant or XO leads with nuclear, biological, and chemical (NBC) NCO, a rifle platoon, one ATGM ILOV, and the weapons squad leaders. Company-sized TAA is 400 meters (or more depending on attachments) in diameter; restrictive terrain may call for platoon-sized TAAs in a star pattern.

- *Security.* Fifty-percent security per platoon is adequate as a general rule; rifle platoons use two fire team-sized observation and listening posts 100 meters out and two fire teams as a QRF inside the perimeter — either the driver or vehicle commander is up in the ICVs, ATGM crews keep 2 men up, and mortars keep one tube up. When bringing leaders to one location, increase security to 100 percent.

- *MGS or ATGM variant placement.* Placement varies, concentrating them in one spot makes logistics operations easier and faster, but interspersing them between rifle platoons provides good thermal coverage and better security for those vari-

ants from dismounted infantry. Company headquarters and fire support platoons are usually placed in center, although mortars may have to relocate to meet mask and overhead clearance needs.

The SBCT rifle company performs as advertised. It achieves decisive operations in the offense, defense, stability, and support, and is capable of full-spectrum operations. It dominates its battlespace through use of combat power elements — maneuver, firepower, information, protection, and leadership as applied to current conditions. The MTOE sets the framework for combined arms at the company level. The SBCT company achieves the Tenets of Army operations — initiative, agility, depth, synchronization, and versatility through mission-type orders, junior-leader initiative, and situational awareness and understanding. As Transformation continues toward equipping and training the remaining SBCTs and building the Objective Force, TTP and doctrine will continue to evolve. The fundamentals that prepare leaders to fight the conditions as defined by METT-TC will not.



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Employing an Armor QRF in the Area Defense:

“Area defense is a type of defensive operation that concentrates on denying enemy forces access to designated terrain for a specific time rather than destroying the enemy outright. The bulk of defending forces combine static defensive positions, engagement areas, and a small, mobile reserve to block enemy forces. The reserve has a priority to the counterattack...but may also perform limited security force missions.”¹

U.S. Army Field Manual 3-0

by Major William J. VandenBergh

As the United States’ participation in the Second World War loomed in 1941, much of America’s early fighting strength came from the Army National Guard. The 194th Tank Battalion had been organized from three National Guard tank companies, Company A from Brainerd, Minnesota; Company B from Saint Joseph, Missouri; and Company C from Salinas, California. The 194th Tank Battalion had deployed to the Philippines during the fall of 1941 in support of its defense from a possible Japanese attack.

The American defensive plan had been set for several years. The task of the Philippine and U.S. Army ultimately would be to defend Manila Bay with the purpose of denying the Japanese its use, and to allow for reinforcement from the Territory of Hawaii.² Manila Bay could only be denied to the Japanese by occupying the Bataan Peninsula and the Island of Corregidor,

which guarded the harbor.³ Retention of the Bataan Peninsula was the center of gravity for the entire Luzon Defensive Campaign. The plan was to defend for up to 6 months, until relieved by the U.S. Pacific Fleet stationed at Pearl Harbor.

Initial Japanese landings on Luzon occurred between 9 and 10 December 1941.⁴ Unable to introduce combat power against these remote sites and unwilling to divide forces, U.S. forces could do nothing but wait for Japanese troops to arrive.

The 194th Tank Battalion was commanded by Lieutenant Colonel (LTC) Ernest B. Miller and was comprised of M3 tanks, half-tracks, jeeps, and motorcycles. For nearly a month, the 194th Tank Battalion had fought along a series of phase, obstacle, and holding lines, executing a retrograde delay from both North and South Luzon. It had fought a number of sharp actions and contributed significantly to the success of the orderly delay of American and Filipino forces back to the Bataan Peninsula. (Map 1)



The 194th Tank Battalion in action during the Luzon Defensive Campaign 1941-42

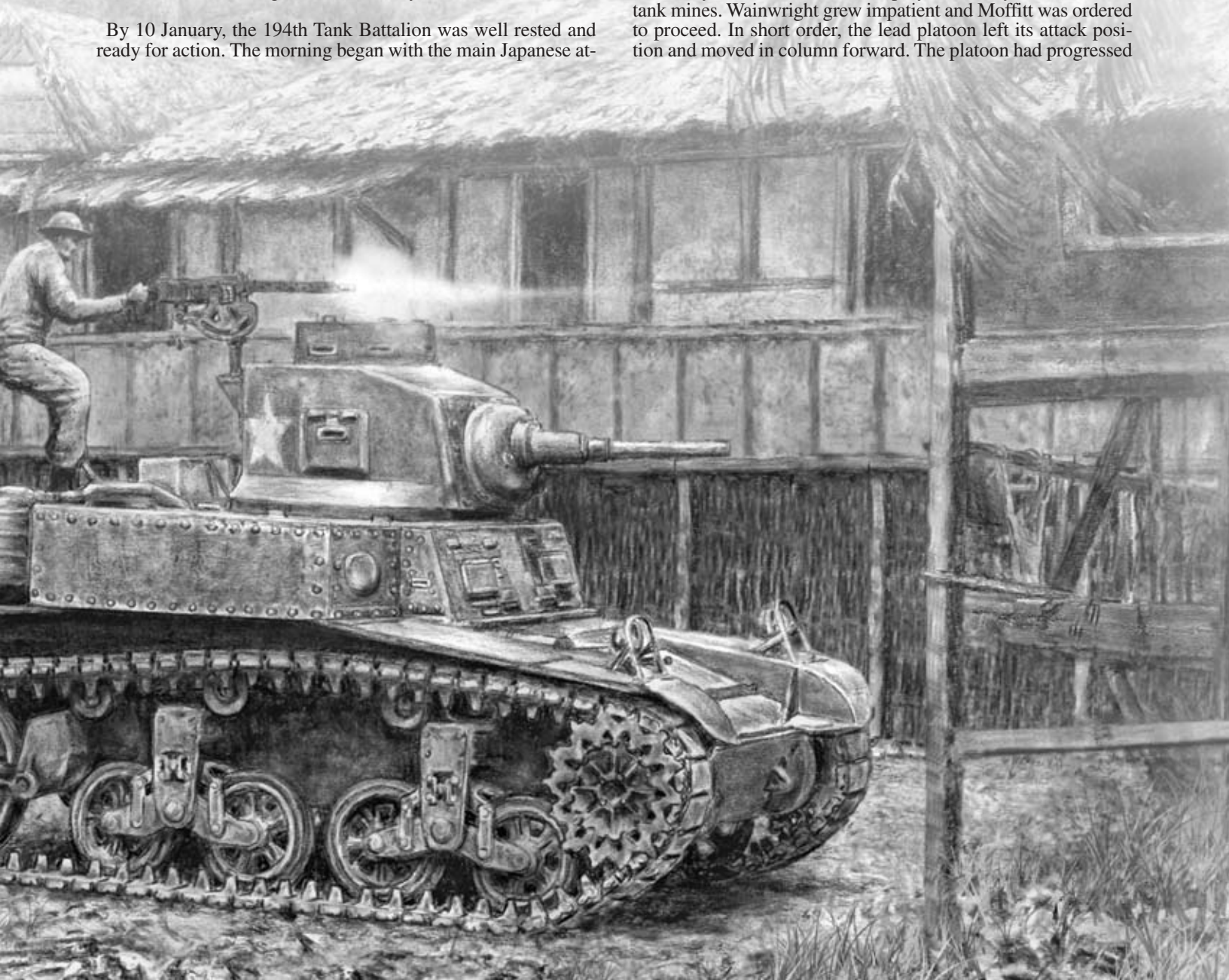
The peninsula of Bataan is 20 miles wide and 25 miles long. Its existence is owed to two large extinct volcanoes, Mount Natib in the north and Mount Bataan in the south. They tower 4,222 and 4,722 feet respectively.⁵ From the volcanoes, scores of streams race through the jungle down deep ravines. The jungle cover is so thick that Japanese reconnaissance from the air was nearly impossible. Bataan had numerous trails that, with lack of use, quickly grew over and road systems were few and undeveloped.⁶ In the north, traveling from west to east was Highway 7. In the east, Highway 110 began far to the north and followed the coast south, then west and north to Moron. The west side of Highway 110 was designated as West Road, the east side as East Road. In the center of the Bataan Peninsula was the Pilar-Bagac Road. It cut directly across the center, providing the only lateral route.⁷ The final defensive battles occurred on the Bataan Peninsula. The first line was known as the Abucay-Hacienda Line.⁸ (Map 2) Along this defensive line were two higher headquarters, I and II Corps. I Corps had been the North Luzon Force and II Corps was the former South Luzon Force. The 194th Tank Battalion was allocated to II Corps in the east. The II Corps front was 15,000 meters long from Manila Bay to Mount Natib.⁹

By 10 January, the 194th Tank Battalion was well rested and ready for action. The morning began with the main Japanese at-

tack within II Corps' area of operation (AO) near Abucay. Here, the 194th Tank Battalion moved forward to support the 57th Infantry (PS). The 57th Infantry was opposed by the Japanese 1st and 2d Battalion, 142d Infantry, 65th Brigade.¹⁰

As the battalion fulfilled its mission, Miller received a desperate early morning call. The Japanese had attacked in the I Corps and made a deep incursion. Captain Fred C. Moffitt and his Company C was sent into action. Lieutenant General (LTG) Jonathan M. Wainwright met Moffitt personally. Wainwright directed the company to attack north along a small trail. The Japanese 3d Battalion, 20th Infantry had successfully infiltrated south from Mount Silangan using the deep gullies and streams to mask their movement. Now they established defensive positions just to the north.¹¹

Wainwright's plan had the scouts (dismounted for the attack) from the 26th Cavalry clear the route ahead of time but no infantry was available to support the tank movement. Moffitt quickly identified the need for a leader's reconnaissance and additional infantry support to walk next to the tanks to deny the Japanese the ability to ambush them or employ the deadly model 93 anti-tank mines. Wainwright grew impatient and Moffitt was ordered to proceed. In short order, the lead platoon left its attack position and moved in column forward. The platoon had progressed





Map 1.

The Fall of the Philippines — United States Army in World War II, Louis Morton, United States Government Printing Office, Washington, D.C., p. 246.

Pilar. Here, the covering force would continue its mission, allowing the main body time to re-establish a coherent defense. Miller was pleased with the plan and was impressed with the learning that had occurred at the higher level.¹⁴

By 1800 hours, the withdrawal was underway. The undertrained Filipino troops attempted an orderly movement, but it quickly degenerated into a mob movement. Miller and a number of trained Filipino soldiers attempted to instill discipline, but the task was difficult. By 1900 hours, the Japanese sensed these movements and their attack began.

The II Corps' line in this sector was comprised of the 31st and 45th Infantry Regiments.¹⁵ The 31st and 45th Infantry covering forces fought savagely through the night, but by 0100 hours, it became apparent that their combat power was rapidly dwindling. Their successful withdrawal to new positions within a few hours and stabilizing the line over the next two-and-a-half days of fighting would determine whether the new defensive line would hold.¹⁶

As the 194th Tank Battalion provided the covering force for the 31st and 45th Infantry, Miller took some desperate radio traffic from Weaver. The left flank of II Corps was threatened with collapse and additional combat power was needed.

Moving slowly west along a small trail, the tanks and half-tracks approached their positions. It was during this movement that one of Company A's tanks, commanded by Sergeant Bernie FitzPatrick, ran partly off the side of a bridge and became stuck.¹⁷ With little time to effect a recovery, Miller ordered it destroyed. A single 37mm round from another M3 set the tank on fire. It was quickly pushed into the stream. The move had to be made before the moon rose, but this aided in their concealment. The tanks and half-tracks were set into position and opened fire. A deadly massing of 37mm fire from the M3s and 75mm fire from the half-tracks stopped the Japanese attack cold. The infantry covering force withdrew and mounted buses that took them to safety. By 0300 hours, the operation was complete.¹⁸

By 26 January, the 194th Tank Battalion was positioned just south of the Orion-Bagac defensive line.¹⁹ (Map 3) It was arrayed from north to south, along Back Road. As 1030 hours approached, several half-tracks, performing their security mission, sighted a Japanese officer and soldier as they crawled out of the jungle and walked to the south toward the intersection of the Back and Banibani Roads. Private Nordstrom manned the half-track's .30-caliber machine gun. A well-placed burst of his .30-caliber machine gun tore the two apart. Within a matter of minutes, the entire defensive line opened fire and a new battle

only a short way when Moffitt heard an explosion. The two lead tanks had hit a minefield. As the company evacuated the two tanks, Japanese infantrymen crawled away and made good their exfiltration. From concealed positions, the Japanese fired their lightweight model 11, 37mm guns. Because of the thick vegetation, both sides had difficulty targeting. With some difficulty, the remaining tanks provided cover fire, as the two lead tanks were evacuated.¹²

Moffitt's executive officer sent back a contact report to Miller who reciprocated by draining the battalion's maintenance section of its last track links and idlers. Wainwright finally accepted the need for more infantry and moved forward the 3rd Battalion, 72nd Infantry, along with a motorized squadron from the 26th Cavalry.¹³ From there, the American infantry reformed the line correctly and advanced north, checking the Japanese incursion and restoring their previous positions.

Later that evening, Brigadier General (BG) James R. N. Weaver, commander, 1st Provisional Tank Group, called a commander's huddle with both the 192d and 194th Tank Battalion commanders. The main body of front line troops would exfiltrate rearward that night leaving behind a small covering force. By 0300 hours the next morning, the covering force would also withdraw to positions north of the Orion-Bagac line near the town of

began. The half-tracks replied by opening fire with their 75mm guns.

Prior to the battle, the gunners had identified several gullies and pieces of low ground that provided concealed and covered infiltration routes. As the battle began, the 75mm guns poured their fire into the gullies with devastating effect.²⁰ As the Japanese made it out of the smoke, dazed and suffering from the concussions, they were greeted with machine gun fire that succeeded in killing many of the survivors. Action was hot all along the road. From the north to the south, the battalion replied to the attack with deadly fire. Several times their positions were almost overrun, defended only by the 194th Tank Battalion support troops manning Thompson submachine guns and .45-caliber pistols.²¹

By 1130 hours, the Japanese artillery and mortar fire was zeroing in on the battalion's position.²² At 1200 hours, Miller was forced to order a retreat behind the main line of resistance. The battalion's withdrawal was met by a determined Japanese air attack on the convoy.²³ The .50- and .30-caliber machine guns that were mounted on tanks and half-tracks met the attack the best they could. Accuracy for both the Japanese and the Americans was difficult, as the tanks and half-tracks were moving down the dirt road so quickly that the gunners and enemy pilots had great difficulty seeing through the dust.²⁴

Weaver was quick to issue the 192d and 194th Tank Battalions a fragmentary order. The 194th Tank Battalion was to continue to provide an armor reserve for II Corps, while it gained an on-order mission to defend the beaches from the front line in the north to the town of Cabcaben in the south. Miller was frustrated with the command arrangement, as Weaver directed him to take orders only from Tank Group Headquarters rather than a more simplified chain of command directly from II Corps Headquarters. To facilitate better liaison, Miller complied with the orders but sent his reconnaissance platoon leader, Lieutenant Ted Spaulding, to Corps Headquarters as the battalion's liaison officer.²⁵

General Masaharu Homma, commander of Japanese forces in the Philippines, met with his 14th Army staff on 8 February. All attempts at reducing the American position had failed miserably. Now, with his attack force spent, he looked at new options for victory.²⁶ The original Japanese plan had contemplated an order of battle that included the elite 48th Division attacking at Linagayen Gulf, the 16th Division at Lamong Bay, and reinforcement at Linagayen by the 65th Brigade.²⁷ The campaign would last 50 days at most.

As early as January, Homma had received word from the Southern Army that the 48th Division was to be withdrawn to support operations in Java. The fight for Bataan began with only the 16th Division, the 7th Tank Regiment, and the 65th Brigade. Neither unit had a very good

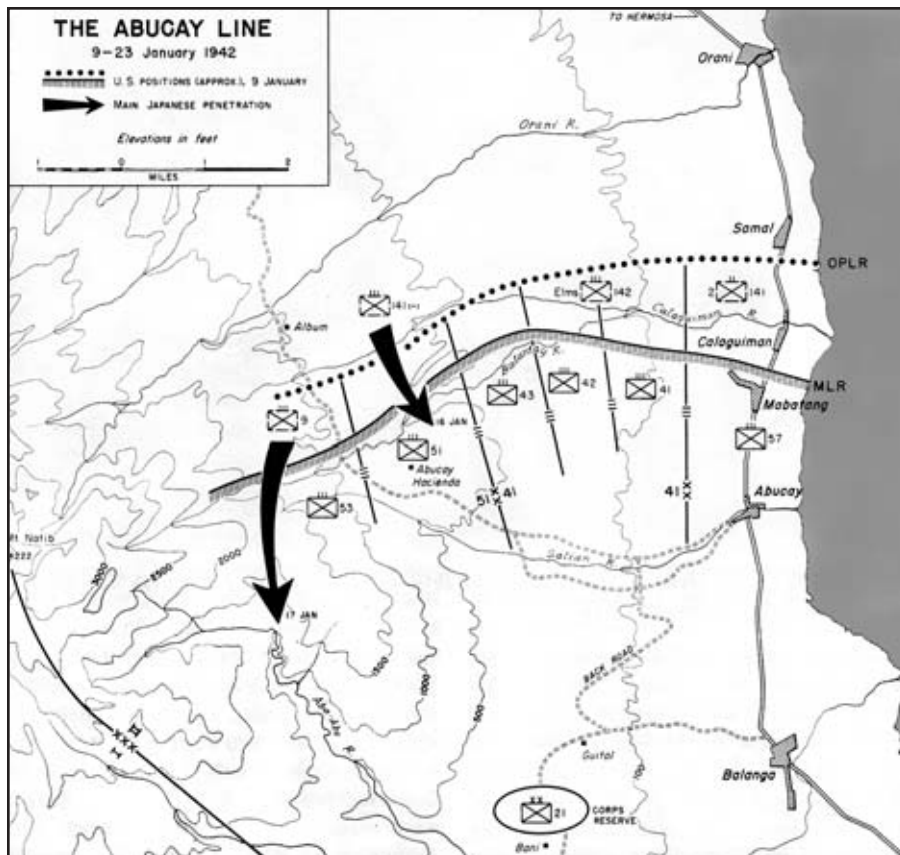
reputation after the first battles for Bataan.²⁸ Homma was overwhelmed by a sense of private and international humiliation. Here, for the first time during World War II, the Japanese had been stopped cold in their tracks with no hope for victory without reinforcement.

Meanwhile, significant work was completed in the preparation of the Pilar-Bagac line.²⁹ Fighting positions with overhead cover were built. Mines were laid to cover dead space that rifle fire could not cover. Time was found to further train the remaining Filipino troops and Miller ordered classes for the tankers on how to support the infantry.³⁰

The morale of the troops was very high. The Japanese had been fought to an utter standstill. Desertions and discharges on the part of the Philippine Army had helped to reduce the unmanageable size of the force on Bataan. Combat effectiveness had increased markedly as combat experience weeded out the weak and brought forward the soldiers with leadership potential.



"Prior to the battle, the gunners had identified several gullies and pieces of low ground that provided concealed and covered infiltration routes. As the battle began, the 75mm guns poured their fire into the gullies with devastating effect. As the Japanese made it out of the smoke, dazed and suffering from the concussions, they were greeted with machine gun fire that succeeded in killing many of the survivors."



Map 2.

The Fall of the Philippines, p. 267.

lery exposed itself by returning counter battery fire, highflying Japanese dive-bombers dropped their bombs, one by one, taking them out. Action occurred in the south as well. Company A, 194th Tank Battalion had received the on-order mission to defend the coastline and was in position that evening when several Japanese barges, armed with 75mm field guns, fired at the shoreline. Company A returned fire and the Japanese decided to retreat.³⁹

On 4 April, Miller was summoned to Tank Group Headquarters. Weaver detailed the plan that II Corps was preparing to counterattack and needed one tank company for support. Additionally, one company from the 192d Tank Battalion would replace Company A in their defend mission. Miller returned to battalion headquarters to conduct an abbreviated military decisionmaking process. Company C, followed by the battalion tactical command post (TAC), would head

It was during this time that the II Corps G2 section detected a massive build up of Japanese forces. The Japanese 4th Division had arrived from Shanghai. The 21st Regiment (part of the 21st Division) had been diverted in route to Indo-China. Finally, several thousand replacements arrived to revitalize the 16th Division and the 65th Brigade.³¹ Japanese air attacks became progressively larger reaching a total of 77 bomber sorties in just one day. The Japanese set up artillery across Manila Bay and fired accurately with the help of highflying aerial observers.³²

As the tankers dug in, dengue fever, malaria, diarrhea, and dysentery afflicted many of the soldiers. Men became prone to dizziness as black spots raced across their view. Captain Leo Schneider, senior medical officer of the 194th, and Lieutenant Hickman, junior medic, set up an infirmary in the rear echelon as they now had a number who were sick. The inadequate amounts of medicine available only amplified the severity of what would have been very treatable afflictions.³³ During the first week of March 1942, soldiers began to be issued quarter rations.³⁴ Not long after this, General Douglas MacArthur left the Philippines and Major General Edward P. King Jr., was given command of Luzon.³⁵

The build up of Japanese troops was completed 2 weeks later. (Map 4) The stalemate continued until the final Japanese assault on 3 April 1942. Arrayed against I Corps from west to east, were the Japanese 65th Brigade, the 4th Division, and a regimental team from the 21st Division (Nagano Det).³⁶ The fighting began at 1500 hours with a massive barrage of indirect fire from over 150 artillery pieces and mortars, quickly backed up by tank and antitank gun direct fire. The artillery fire was so intense that much of the north face of Mount Samat became engulfed in an uncontrollable forest fire. Entire units were destroyed. American and Filipino soldiers, already weakened from malnourishment, simply had no energy to retreat.³⁷ The focus of the attack was the west flank of the II Corps sector.³⁸ As American artil-

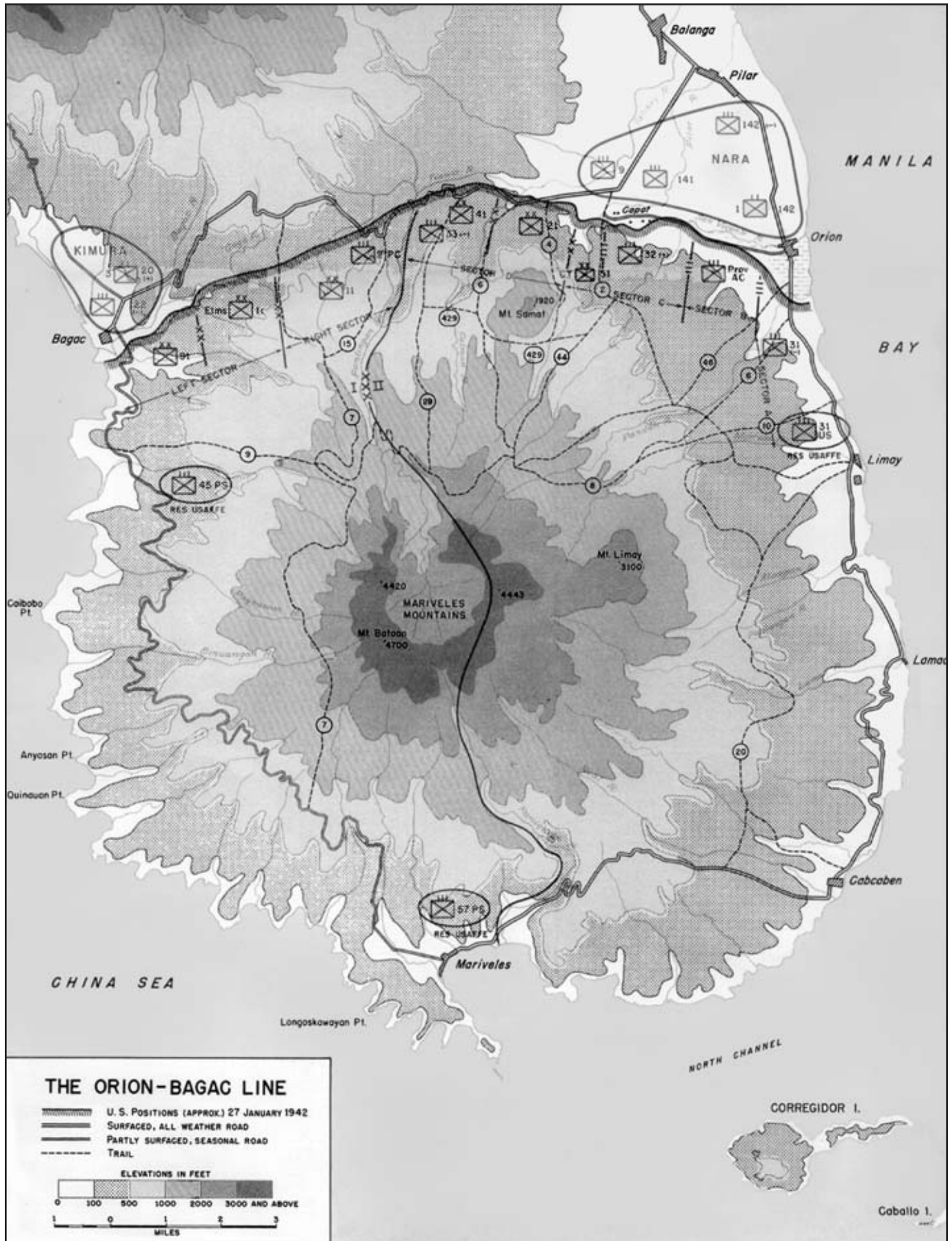
north. The TAC would be comprised of Miller and Captain Spoor, the S2, operating out of a jeep. Major L.E. Johnson, the S3, would take charge of the remaining combat units while Major Charles Canby, the XO, commanded the field trains.⁴⁰

After a wild ride up the narrow trail, Miller and the TAC located the Philippine division headquarters. The plan was for the 45th Infantry Regiment (on loan from I Corps) to attack north along Trail 29. They would flank the Japanese to the right, forcing a withdrawal. Company C would move its tanks on mountain trails to join the 45th Infantry in the attack. The plan was simple, but the men were worn out.

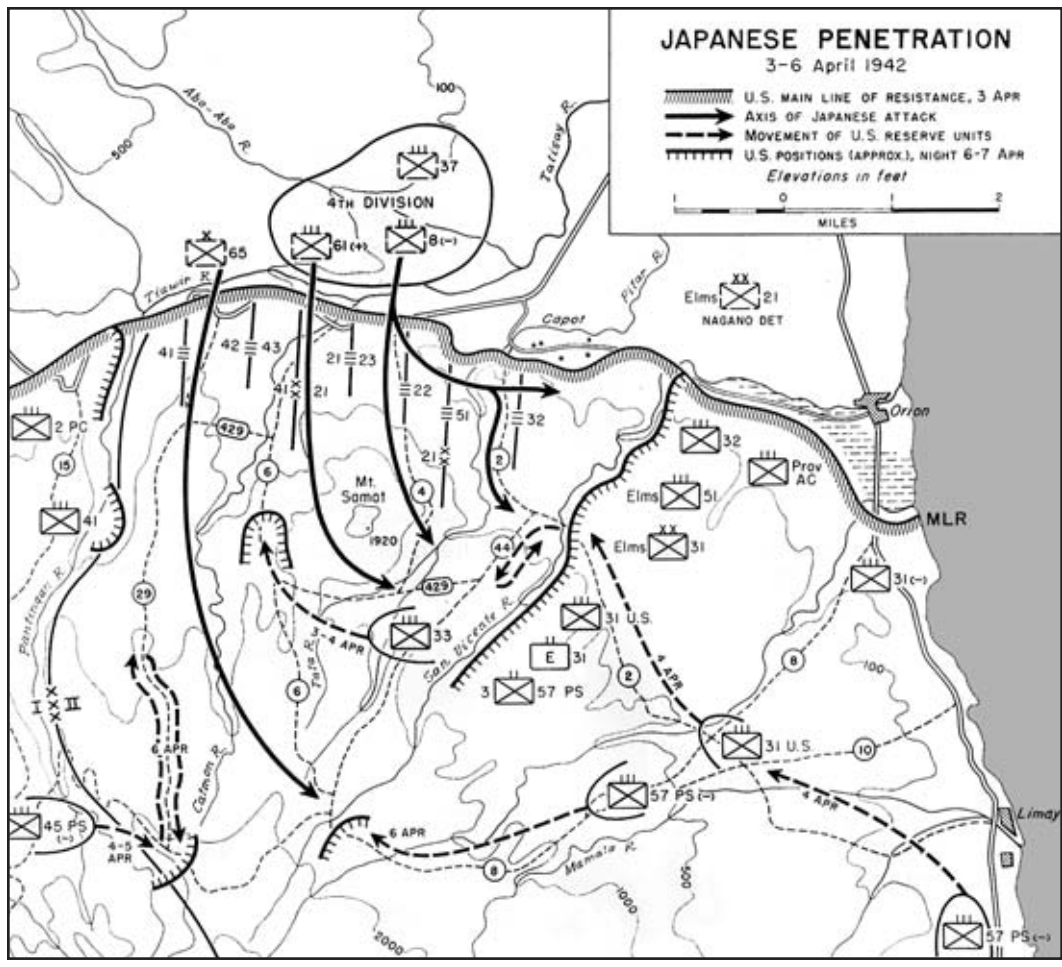
By 1600 hours on 6 April 1942, the TAC arrived at the south end of Trail 29. On arrival, they met Colonel Thomas W. Doyle, the commanding officer of the 45th Infantry. After much discussion and a reconnaissance, the TAC departed at 1900 hours to bring up Company C who was still occupying its tactical assembly area to the south.⁴¹

The trail to the south was jammed with confused traffic. Wounded soldiers were being evacuated, and broken down vehicles littered the battlefield creating massive traffic jams. The ride north would be even more harrowing. The battalion TAC led the way up the trail. At every turn it would find a wreck or obstacle that required evacuation from the route. Precious time was spent dismounting tanks and assessing the best way to deal with the wrecks. Company C tanks would push and pull the wrecks off the trail and then push and pull each other up and down the route.⁴²

Company C arrived at Trail 29 at 0610 hours that morning. They were 10 minutes late in supporting the attack. The 45th Infantry had just begun its movement to contact, allowing the tankers time to quickly catch up. Progress was slow as thick jungle met the trail on either side. The only place to maneuver the tanks was on the trail. This made Miller very uneasy. The infantry and armor advanced cautiously and did not make contact with the Japanese until 0900 hours. After a series of minor en-



Map 3. *The Fall of the Philippines*, p. 324.



Map 4.
The Fall of the Philippines, p. 423.

up defensive positions along a ridgeline north of Trail 8.⁴⁶

The officers returned to their units and began their movement south along Trail 29. As they reached the intersection of Trails 29 and 8, Company C met the Philippine division commander, Brigadier General Maxon S. Lough. He informed Miller that he was aware of the original orders, but that his G2 had informed him that the area along Trail 8 was no longer under American or Philippine control.

The column of infantry and tanks cautiously began their movement along Trail 8. Miller and Lough organized an advanced guard for the 45th Infantry and Company C. In the lead was a squad of Phil-

gagements, Doyle became worried. It was now 1530 hours and his troops had lost contact with I Corps to his left and the troops to his right.⁴³ This suggested to Miller and Doyle that the enemy had infiltrated to the southeast of their area. What they did not know for certain is how far south.⁴⁴

As the two met, a report from Philippine scouts was received and described Japanese troops preparing defensive positions just a short distance to the north. Doyle mulled over several attack options. All his regiment had left for indirect fire was a single 81mm mortar with 10 rounds. Five of the 10 shells were fired expertly, bringing significant damage to the partially prepared Japanese positions. The 45th Infantry and Company C followed up with a short, hasty attack. The Japanese were so surprised that they abandoned their artillery, mortars, and rifles, running and screaming wildly into the jungle. As night approached, Miller and Spoor inspected the Japanese positions and discovered a well-prepared minefield located on Trail 29 next to the positions. The area had been seeded with the deadly model 93 mine that had brought Company C many casualties earlier in the campaign. Once again, luck and circumstance had intervened in their favor.⁴⁵

Later that evening, Miller and Lieutenant Colonel Wright, the 45th Infantry's XO, headed back 2 miles south to re-establish contact with the regimental field trains. The situation was desperate. After arriving at the field trains, Miller and Wright were quickly apprised of the enemy's situation. The Japanese main effort had indeed advanced to the east and south of their advance north. Thus, the Japanese had made a considerable penetration south all the way to the Philippine division headquarters. The division sent the 45th Infantry and Company C new orders. The two units would advance over the mountains to the east, arriving at the intersection of Trails 6 and 8. Here, they would set

up defensive positions along a ridgeline north of Trail 8.⁴⁶

The column of infantry and tanks cautiously began their movement along Trail 8. Miller and Lough organized an advanced guard for the 45th Infantry and Company C. In the lead was a squad of Philippine scouts, followed by two of Company C's M3 tanks. Miller, Wright, and Spoor trailed in a jeep. Movement occurred without incident for some 50 minutes until the advanced guard stopped for a 10-minute rest. Just as the tanks stopped, Miller's jeep accelerated and swung quickly to the right. As they halted, the scouts could be seen passing the first tank calling out, "Japs!"⁴⁷

The Japanese 65th Brigade had beaten them to the area. At that moment, a Japanese 75mm model 95 antitank gun opened fire. Leaves and branches fell to the ground as heavy machine gun fire cut a swath of destruction on the two lead tanks. Lieutenant Frank Riley, the tank commander, attempted to return fire only to receive a direct hit in the turret from an armor-piercing round from the model 95. Luck was on his side that day as the round sliced through the side of the turret, missing his head by inches. Blood ran through his shaking fingers from the small pieces of shrapnel that had been imbedded in his eyes and face. To Riley's rear, the scouts had re-established a hasty defense and, with Tommy guns blazing, returned a murderous covering fire. Miller and Spoor low crawled along the trail back to the scouts. Japanese bullets were striking the ground to their left and right, blowing rocks and sand into their skin.⁴⁸

The second tank escaped destruction by being in a hull-defilade position in a depression. Several accurate shots from the Japanese 75mm antitank gun succeeded in hitting the turret, though. Fortunately, the rounds bounced off harmlessly and the tank, along with Riley's crew, made good their retreat. The advanced guard consolidated and treated their casualties. Miller could see that smoke was pouring from his jeep. It had received a direct hit from the Japanese 75mm gun. Wright, who had occupied the rear seat, was never heard from again. The surviving M3 tank,

along with the scouts, began movement back to the main body of the 45th Infantry.⁴⁹

Vehicle movement was slow as their column neared physical and mental exhaustion. By 0800 hours on 7 April, they had made it back to their original start point, the intersection of Trails 8 and 29. Moffitt explained that life had not been boring for Company C. Earlier that morning, a column of Japanese model 89A tanks from the Japanese 7th Tank Regiment had attempted an attack from the north along Trail 29. Two were destroyed and the Japanese column beat a hasty retreat.⁵⁰

Lough sent orders for Company C tankers to secure the intersection at Trail 8 and 29. The 45th Infantry evacuated the immediate area and moved a short distance south. Miller then received orders from Tank Group Headquarters to return to his battalion. Miller let Doyle know his orders, asked him to take care of Company C, and departed. After a quick stop at Tank Group Headquarters, Miller and Spoor mounted a new jeep and headed south. The battalion field trains had been obliged to move south into a new position due to heavy Japanese artillery fire. Miller rolled into the new location at 0400 hours on 8 April. The trains had set up directly west of the town of Cabcaben.⁵¹

By this time, the defensive line was disintegrating. The Japanese 8th Infantry (4th Division) and the Nagano Det were bearing down hard on II Corps. The Japanese progressed from Limay to Lamao on 8 April alone.⁵² II Corps tasked the 194th Tank Battalion with supporting a new deliberate attack on the Japanese. Company D, commanded by Captain Jack Altman, was being readied when events began to surpass the II Corps staff's ability to assess and react.

Altman attempted to introduce his tanks against the Japanese by providing general support along the defensive line where they could. Company D's attack degenerated quickly. Artillery rained down on the company destroying several M3s. Tanks attempted to negotiate through the retreating traffic, but to little avail. As tanks tried to bypass wrecks, they became stuck in the swampy bogs.⁵³

To the south, Company A, 192d Tank Battalion and the entire 194th Tank Battalion were in defensive positions facing northeast along the coast, directly blocking the Japanese advance. Additional half-tracks were positioned along Trail 10, providing significant information to both the battalion and II Corps headquarters until the fighting ended. That morning, 8 April 1942, the Japanese assembled a motley collection of canoes, fishing boats, and small barges and attempted a half-hearted amphibious landing directly in front of their positions. The Japanese artillery also attempted to fire smoke into the two tank companies to provide obscuration against the tankers. Instead, the rounds fell just short, landed on the beaches, and added insurmountable confusion to the Japanese landing. The Japanese withdrew.⁵⁴

That afternoon, a battalion ammunition truck pulled up next to Company A, 194th Tank Battalion. Before the company could receive their ammunition, the roar of an approaching Japanese zero could be heard. Soldiers took cover as the fighter's machine guns tore apart the truck loaded with ammo. Shells exploded in all directions, causing the ground to shake and dirt to fly. No sooner than it had started, it was over. The driver of the truck stood up from the trench where he had taken cover and dusted himself off. He grinned out of his sun burnt, dirty face and said, "When they ask me where I was at the time of surrender, I can always say I was where the shells were the thickest."⁵⁵

As the afternoon approached, orders were received from Tank Group Headquarters to have the battalion move further south. Companies A and D, 194th Tank Battalion, and Company A, 192d Tank Battalion, began movement. The trip was slow and

arduous. Military police had to stop them several times as ammunition dumps were blown to prevent capture. That evening, the remaining tanks formed a defensive tactical assembly area and waited. The battalion commander's radio operator waited for the code word "blast" on the radio. This would be the signal to destroy all remaining equipment.⁵⁶

Around 0630 hours on 9 April 42, Company C returned to the battalion. At 0700 hours, "blast" was finally received. The tankers worked feverishly to destroy their equipment. One tank fired its remaining rounds into the other tanks and several trucks from the field trains. Gasoline was poured on every major item and lit. Food was evenly redistributed and the men prepared for the unknown.⁵⁷ That night, the men ate corn beef hash and peaches and thought of home. Few could imagine the horrors that awaited them on the death march and internment, but most just wrapped up in a blanket and went to sleep.⁵⁸

The Philippines now began a brutal occupation that came to an end with the return of U.S. forces in October 1944. The lineage of the 194th Tank Battalion is perpetuated by the 1st and 2d Battalion, 194th Armor (Minnesota Army National Guard) and Company C, 1st Battalion, 149th Armor (California Army National Guard).



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⁴LTC Mariano Villarín, *We Remember Bataan and Corregidor*, Gateway Press, Baltimore, MD, 1990, p. 37.

⁵John Keegan, *Atlas of the Second World War*, Harper Collins, London, 1997, p. 73.

⁶Paul Ashton, *Bataan Diary*, Military Historical Society of Minnesota, Little Falls, MN, 1984, p. 101.

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⁸*Ibid.*, p. 93.

⁹*Ibid.*, p. 101.

¹⁰Morton, 267.

¹¹Ernest B. Miller, *Bataan Uncensored*, Hart Publications, Long Prairie, MN, 1949, p. 148.

¹²*Ibid.*

¹³Morton, p. 283.

¹⁴Miller, p. 154.

¹⁵Ashton, pp. 106, 107.

¹⁶Villarín, pp. 65-70.

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¹⁸*Ibid.*, p. 40.

¹⁹Miller, p. 160.

²⁰Morton, p. 294.

²¹Miller, pp. 165, 167.

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²³Ted Spaulding, *Itchy Feet*, unpublished, South Dakota, 1999, p. 109.

²⁴Miller, p. 168.

²⁵Spaulding, p. 109.

²⁶FitzPatrick, p. 42.

²⁷Villarín, p. 26.

²⁸*Ibid.*, p. 59.

²⁹Ashton, p. 112.

³⁰Miller, p. 184.

³¹Morton, p. 413.

³²*Ibid.*, p. 493.

³³Miller, p. 179.

³⁴*Ibid.*, p. 186.

³⁵Morton, 405, 406.

³⁶Ashton, p. 112.

³⁷Villarín, p. 87.

³⁸Morton, p. 415.

³⁹FitzPatrick, p. 51.

⁴⁰Miller, pp. 196, 197.

⁴¹*Ibid.*, p. 198.

⁴²*Ibid.*, p. 199.

⁴³*Ibid.*, p. 199.

⁴⁴Morton, p. 415.

⁴⁵Miller, pp. 200, 201.

⁴⁶*Ibid.*, p. 202.

⁴⁷*Ibid.*, p. 204.

⁴⁸*Ibid.*, pp. 204, 205.

⁴⁹*Ibid.*, p. 205.

⁵⁰*Ibid.*

⁵¹*Ibid.*, p. 206.

⁵²Morton, pp. 442, 443.

⁵³Miller, p. 206.

⁵⁴*Ibid.*, p. 208.

⁵⁵FitzPatrick, p. 52.

⁵⁶Miller, p. 208.

⁵⁷*Ibid.*, p. 209.

⁵⁸FitzPatrick, p. 53.

Integrating Dismounts into Reconnaissance and Security Operations in the Heavy Cavalry Troop

by Captain Jarrod P. Wickline



“In reconnaissance, every scout makes a difference.”¹

We refer to them as just another guy in back or loader. When scanning a modification table of organization and equipment (MTOE) that lists nine M1A1/A2s, thirteen M3A2/A3s, and two 120mm mortars, it is easy to put them on the back burner and train them only on reloading the tube-launched, optically tracked, wire-guided (TOW) missile or 25mm Bushmaster. At gunnery, they are gate guards and ammo detail. At a combat training center, they are great for keeping the back of the Bradley clean, even if they clutter the vehicle with their equipment. They are the first to go on borrowed military manpower taskings and the last position filled on crew rosters.

Yes, I am referring to the dismounts. In the heavy cavalry world, our training focus is often centered on qualifying crews for gunnery and maneuvering integrated scout/tank teams. As a result, we often forget about the 19D10s bouncing around in the backs of Bradleys. I propose we are wasting one of our greatest assets — an intelligent, thinking human being with a radio, capable of executing the commander’s intent and maximizing the advantage that technology offers. The M1A1 has a

3-kilometer range, which is worthless if destroyed seeking targets instead of being walked on by a scout forward with eyes on.

Restrictive terrain, particularly built-up areas, an increasingly common setting for combat in our modern world, demands the integration of dismounted scouts for the successful employment of tanks and Bradleys.

Planning Factors for Reconnaissance Operations

During reconnaissance operations, as in most offensive operations, time is the key factor in planning. The critical tasks for zone reconnaissance are:

- Find and report all enemy forces within the zone.
- Reconnoiter all terrain within the zone.
- Inspect and classify all bridges within the zone.
- Locate fords or crossing sites near all bridges in the zone.
- Inspect and classify all overpasses, underpasses, and culverts.
- Locate and clear all mines, obstacles, and barriers in the zone.

- Locate bypasses around built-up areas, obstacles, and contaminated areas.

- Report all reconnaissance information.²

The cavalry commander narrows the focus of these tasks in his concept of the operation, where he specifies the tempo and focus of the reconnaissance. In an aggressive, enemy oriented reconnaissance, the focus is on locating and destroying enemy forces within the cavalry unit’s capabilities. Conversely, in a deliberate, terrain oriented reconnaissance, the pace and focus of the operation is on learning all military aspects of the terrain within the zone. Dismounted operations are time consuming by their nature and seem most applicable to deliberate reconnaissance operations. However, aggressive reconnaissance affords many opportunities for using dismounted scouts.

Integrating Dismounts in Planning and Execution

Aggressive reconnaissance. The first fundamental of reconnaissance is “maximum reconnaissance force forward.”³ During aggressive reconnaissance, leaving dismounts to reload the M3 weapons systems is a violation of this fundamen-

tal. U.S. Army Field Manual (FM 17-95), *Cavalry Operations*, deems dismounted reconnaissance techniques appropriate when:

- Intelligence preparation of the battlefield (IPB) indicates close proximity to enemy positions.
- Enemy contact is expected or has been achieved.
- Restrictive terrain is encountered.⁴

Proximity to the enemy or gaining contact with the enemy demands the use of dismounted scouts. Making contact with Bradleys most often means direct fire contact, and when the fighting begins, reconnaissance ceases. Making contact with dismounts allows the cavalry commander to retain the initiative and decide whether or not to commit his combat power, rather than reacting to enemy direct fire. The dismounted scout's stealth allows him to close with the enemy with a much smaller engagement risk. The trained scout can then facilitate unhindered and informed mounted maneuver to the enemy's flank and rear. If he determines the enemy's strength to be more than the unit is capable of handling, he can prevent the premature commitment of combat power.

Restrictive terrain enhances the dismounted scout's stealth. A head peeking over an intervisibility (IV) line presents a much more difficult target than cresting an entire cavalry fighting vehicle (CFV). Thickly wooded areas are ideal locations for both mounted and dismounted anti-tank guided missile ambush positions. A dismounted scout, supported by his mounted element, mitigates the risk presented by

wood lines and allows for a more thorough reconnaissance of restrictive terrain.

Using dismounts requires little more than stopping short of restrictive terrain or a templated enemy location, dropping the ramp, and dismounting your scouts. Primarily, they move with the mounted element and are dismounted as needed. The dismounting vehicles provide casualty evacuation (CASEVAC) and direct fire support. This should be nothing more than a battle drill, executed at the individual vehicle level. Overall, dismounting scouts slow vehicle or section maneuver, but maximize the unit's ability to avoid decisive engagement and maintain freedom to maneuver.

Deliberate reconnaissance. As mentioned earlier, deliberate reconnaissance operations afford more opportunities to use dismounted scouts. Typically, more time is available, and more detailed reconnaissance information is required. Dismounted reconnaissance patrols are often required and must be planned in detail prior to crossing the line of departure. CASEVAC and direct fire support responsibility must be assigned. It is often necessary to combine dismounts from several vehicles or sections to form a patrol; dismount points must be identified during the planning process. FM 7-8, *Infantry Rifle Platoon and Squad*, and FM 17-98, *Scout Platoon*, offer great techniques for conducting dismounted reconnaissance patrols.⁵ Dismounted patrols are effective for obtaining detailed information of pieces of key terrain within the zone and classification of bridges, overpasses, underpasses, and culverts.

Security Operations Planning Factors


The critical tasks for security operations are:

- Maintain continuous surveillance of all battalion-sized avenues of approach into the sector under all visibility conditions.
- Destroy or repel all reconnaissance elements within capabilities.
- Locate the lead company of each suspected advance guard battalion and determine its direction of movement.
- Maintain contact with the lead company of the advance guard battalion while displacing, and report its activity.⁶

The key planning factor for security operations, as well as the most often overlooked, is depth. Often, when given a phase line to screen, platoon leaders and commanders become fixated on the screen "line." Lining vehicle OPs along a phase line creates a screen easily penetrated and provides limited security for the protected force. Depth allows an enemy contact to be passed from one element of the screen to another without displacing. FM 17-95 states that depth is advantageous to:

- Destroy an enemy reconnaissance patrol without compromising critical OPs.
- Prevent the enemy from penetrating the screen line too easily.
- Prevent gaps from occurring when OPs displace or are lost.⁷

FM 17-95 goes on to explain that, "Depth is achieved primarily by the positioning of OPs, particularly where there are limited



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avenues of approach.”⁸ Integrating dismounted scouts increases the number of OPs available along these avenues of approach and is essential in creating depth.

Integrating Dismounts in Planning/Execution

The roles of dismounts change during security operations. Visibility conditions have the greatest impact on whether OPs are the primary observers of their sectors or are used as listening posts, local security, or for patrolling dismounted avenues of approach. Dismounted OPs act as primary observers during daylight hours and allow vehicles to set in hide positions, eliminating on-screen vehicle signatures. Rotating scouts on OP duty is essential. Individual scouts should not observe for more than 20 minutes every hour, so planning OP manning and personnel rotation is critical to maintaining vigilance on the screen. Maps with complete graphics, binoculars, mini-eyesafe laser infrared observation sets (MELIOS), and precision lightweight global positioning system receivers are essential tools in the dismounted OP. Leader involvement is also key. Squad and section leaders should be present in the OP at all times, and platoon leaders and platoon sergeants should visit OPs to ensure proper orientation and manning. OPs should relocate at random times to avoid being compromised or destroyed; alternate and subsequent positions must be developed either during planning or after occupying the screen. Critical OPs must be identified and a re-seeding plan established. Ideally, during daylight hours, dismounted OPs should

hand off targets directly to the tanks in support behind the screen.

Limited visibility operations change the nature of dismounted OPs. PVS-7s and PAS-11s are not sufficient for dismounted OPs to remain the primary observers. The integrated sight unit on the Bradley must be used to maintain surveillance during hours of limited visibility. The transition from dismounted OPs to mounted OPs must be planned and executed prior to nightfall to ensure continuous surveillance of the assigned sector. During limited visibility periods, dismounted scouts are employed as local security for mounted OPs. Patrols should be organized to cover gaps between mounted OPs and establish security in dismounted avenues of approach. Platoon leaders and commanders must ensure patrolling is conducted to maintain security during limited visibility periods.

Given the rapid nature of heavy cavalry operations, it is easy to understand how dismounts are often overlooked during both the troop and platoon planning process. Dismounts are looked at as a liability, particularly in terms of operational tempo. Without a doubt, there are situations where speed is the primary concern and using dismounted scouts is just not feasible. However, this article illustrates that only in the most unusual circumstances are dismounts best used as loaders. Dismounts provide early, stealthy detection in the offense and allow calculated and deliberate commitment of combat power during reconnaissance operations. During security operations, dismounts are

a vital component of depth and prevent mounted elements from compromising the screen during daylight hours. During periods of limited visibility, they provide local security through patrols that cover gaps between OPs, particularly along dismounted avenues of approach. Dismounted cavalry scouts are assets that each commander and platoon leader must factor in his planning process to ensure “max eyes forward.”



Notes

¹U.S. Army Field Manual (FM) 17-95, *Cavalry Operations*, U.S. Government Printing Office (GPO), Washington, D.C., p. 3-3.

²*Ibid.*, p. 3-15.

³*Ibid.*, p. 3-3.

⁴*Ibid.*, p. 3-5.

⁵FM 7-8, *Infantry Rifle Platoon and Squad*, GPO, Washington, D.C., 22 April 1992, Change 1, 1 March 2001; and FM 17-98, *Scout Platoon*, GPO, Washington, D.C., 10 April 1999.

⁶FM 17-95, p. 4-7.

⁷*Ibid.*, p. 4-6.

⁸*Ibid.*

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Time for a Change in Tank Gunnery

by Sergeant First Class Timothy L. Gray

In the process of deploying numerous armor units to Iraq, a noticeable need for changing or adding to current tank gunnery tables has emerged. Current gunnery tables are good, but somewhat dated. The likelihood of facing multiple targets involving tanks and personnel carriers are fading. The modern battlefield appears to be headed for a more urban, less open, closer target engagement environment.

Many engagements are at extremely close ranges and it is not uncommon for tanks to engage cars, trucks, or even buildings with main guns at ranges that rarely exceed 400 meters. The current Table VIII targets are greater than 400 meters and many .50-caliber engagements are less than 200 meters, and the loader's M240 machine gun is being used much more often than current gunnery table requirements dictate.

Current Tank Table VIII main gun engagements involve defensive and offensive situations typically firing at ranges in excess of 1200 meters. Target arrays consist of tanks and personnel carriers. Longer ranges were used due to the capabilities of the M1-series tank to accurately engage at that distance when most other armies' tanks could not.

The .50-caliber engagement is fired by tank commanders at ranges typically over 500 meters. There is only one .50-caliber

engagement on Table VIII; there is no loader's M240 engagement on Table VIII.

There are preliminary tables fired as a prerequisite to shooting Tank Table VIII. These tables do include a loader's engagement with the M240, as well as .50-caliber engagements; however, these engagement scenarios are lacking realism and generally just give practice to prepare for Table VIII.

While these tables do encourage and enhance teamwork while using the tank's full capabilities, they are lacking in certain aspects.

The .50-Caliber Machine Gun

The .50-cal. machine gun on the M1A1 tank series is somewhat difficult to manipulate quickly and accurately. Most tankers have their own tricks of the trade for that one engagement. Beforehand, most would line up the commander's weapon station (CWS) sight with the gunner's primary sight (GPS) and have the gunner sense as the tank commander adjusted the sight in elevation or depression. Although usually successful, it is not realistic or practical to do this in Iraq.

While patrolling narrow streets, it is nearly impossible to safely traverse the entire turret to engage enemy forces. Many of the potential or actual engagements would be at such close range that the time re-

quired to drop down, align the CWS with the target, and fire the weapon would result in a completely missed target with potentially devastating results for the crew. Many tank commanders keep the M4 carbine close by instead. When asked about how they use the .50 caliber, many tank commanders have the same response. They keep the CWS power control handle mounted up top for quick access. They also keep the .50 caliber level in elevation and if they have to engage quickly, they "John Wayne'd" the engagement. Some tank commanders admitted that it just makes a lot of noise and is difficult to hit targets. All of them had the M4 carbine ready to use while riding in the hatch.

Another drawback is that the tank commander is the only crewmember to fire the "ma-deuce" during gunnery. Many times, tanks are used for perimeter security or for guarding facilities or bases. During these times, it is not unusual to have a gunner, loader, or driver manning a weapon that most have never fired. All crewmembers should fire the .50 caliber at various ranges, and be proficient with it, not just familiar.

The Loader's M240 Machine Gun

The loader's M240 machine gun is underused at gunnery ranges. Unfortunately, many tank crews treat the loader's

M240 as a “spare coax.” Many times during field training exercises the loader’s M240 is never fired because it gets dirty. This is unfortunate and unacceptable. The loader’s sector of responsibility could require him to engage a rocket-propelled grenade team, or any other target. To not train to standard in peacetime jeopardizes individuals, as well as entire crews, during wartime. I have also witnessed loader’s M240s not fired at live-fire exercises for fear of shooting the bore evacuator or collimator off. This too is unacceptable.

Several tank commanders expressed a desire to replace the loader’s M240 with an MK19 grenade launcher. One tank commander suggested that wingman tanks be equipped with MK19s. Another tank commander wanted M203 grenade launchers on both M4 carbines. They all expressed the need to “lob” rounds onto rooftops and the loader’s M240 did not meet that need. Either way, the entire

crew, including the tank commander, should be required to fire several engagements with the M240.

Close Targets

The M1-series fire control system is accurate out to 4,000 meters, but many engagements fired in Iraq are too close to even laze. Some say, “if you can hit it at 2,000 meters, 200 meters or less is no problem.” This might be true, but the surprise of having a target so close sometimes catches gunners off guard, resulting in confusion. I recommend several engagements at a gunnery range at targets of 500 meters or less.

Engaging from a HMMWV Window

This is not directly related to Tank Table VIII, but many tankers often times are tasked to ride in various wheeled convoys in Iraq. Convoys happen daily in Iraq. Whether it is to escort supplies, de-

liver mail, or transport personnel, there are usually high-mobility, multipurpose, wheeled vehicles (HMMWVs) in convoys. All personnel should be armed with an M4/M16. Engaging from a moving HMMWV while seated and wearing a seatbelt is awkward and difficult. There are currently no training requirements for shooting from a HMMWV window. Scouts have their own tables, but this type of engagement is not part of the table. A HMMWV table for all military occupational specialties, involving shooting not only from the passenger positions, but from the crew-served weapons up top (if so equipped) would be beneficial.

There are many new tactics, techniques, and procedures being developed here in Iraq. The current tank gunnery tables are good, in that they develop teamwork, instill confidence in the tanks’ fire control system, and develop lethal tank crews. However, they are not adequate for the current battlefield in Iraq.

Master gunners, commanders, and tank commanders should be creative, imaginative and use ranges to develop different scenarios. This training will ensure success while deployed to Iraq. Oh, if ammunition for this is a concern, redirect ammunition from other tables including Tank Table XII. Find ammunition — it’s out there. Not to train for the close-in urban fight, with all crewmembers using all weapons systems, is detrimental to the lives and safety of tank crews.



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“The loaders M240 machine gun is underused at gunnery ranges. Unfortunately, many tank crews treat the loader’s M240 as a “spare coax.” Many times during field training exercises the loader’s M240 is never fired because it gets dirty. This is unfortunate and unacceptable. The loader’s sector of responsibility could require him to engage a rocket-propelled grenade team, or any other target. To not train to standard in peacetime jeopardizes individuals, as well as entire crews, during wartime.”

A Combat Multiplier in Iraq: The Long Range Advanced Scout Surveillance System

by Major Edward J. Stawowczyk



The long-range advanced scout surveillance system (LRAS3) greatly enhanced the survivability and lethality of the 3d Infantry Division (3d ID) during Operation Iraqi Freedom. This article is based on interviews with soldiers who used the system during combat operations in Iraq. These interviews gained valuable information on the system's performance during combat operations to confirm expectations and gather recommendations for product improvements.

The 3d ID received an out-of Department of the Army Master Priority List (DAMPL) fielding of the LRAS3 in February 2003 and the product office quickly conducted the fielding at Camp New York, Kuwait. To support this urgent requirement, product manager forward looking infrared (FLIR) provided a total of 42 systems, of which 39 systems were mounted on M1025/1026 and M1114 type vehicles. The three remaining systems were then issued to each forward support battalion as operational readiness floats (ORFs).

Each brigade received 13 mounted systems and one ORF. Brigade reconnais-

sance troops (BRT) received four mounted systems and each maneuver battalion scout platoon received three mounted systems. In addition to system installation, the product manager provided new equipment training for crews assigned to the systems.

All soldiers interviewed expressed an intense satisfaction with the LRAS3's performance. Simply put, it enhanced their survivability by allowing them to maintain a significant standoff range outside Iraqi weapons systems. The scouts consistently detected Iraqi forces far in advance of being detected. This enhanced the scouts' effectiveness as the task force and brigade commanders' "eyes and ears," allowing them to quickly and accurately determine and report enemy target location and direction. With accurate enemy target locations, the scouts effectively called for artillery fire or close air support (CAS) and provided timely and accurate information to task force maneuver units.

All soldiers interviewed stated that the LRAS3 enabled them to perform their mission more effectively. During one in-

terview, a crew assigned to one of the scout platoons established that prior to having LRAS3 they would maneuver their vehicle along the low ground to avoid detection by enemy forces. After receiving LRAS3, they adjusted this technique and maneuvered more frequently along the high ground because of the system's long-range target acquisition capabilities. This technique adjustment allowed the crew greater opportunity to acquire more enemy targets without having to assume unnecessary higher risk. The standoff range between the LRAS3 and enemy weapons systems proved most effective in enhancing crew survivability.

The range capability and image clarity provided by LRAS3 is credited with preventing several fratricides because operators could distinguish between enemy and friendly vehicles beyond the ranges of other systems. Two such incidents were related during the interviews. The first incident involved a supply sergeant who became navigationally challenged and entered an adjacent unit's sector. The LRAS3-equipped crew identified the vehicle and notified units in sector not to

fire on the vehicle. The second incident involved a report from a local civilian of an unknown vehicle approaching the unit's sector. This civilian thought it was an Iraqi vehicle; the LRAS3-equipped crew quickly identified it as an M88 recovery vehicle moving into sector and notified adjacent units of the friendly vehicle.

LRAS3 worked extremely well in conjunction with other systems, such as the Force XXI battle command brigade and below (FBCB2) and the combat identification panels (CIP). Many of the crews interviewed highlighted this factor. Many of the operators related how the CIP were easily distinguished through the sensor. In addition, leaders at platoon and company levels remarked how using FBCB2 in conjunction with LRAS3 helped maintain situational awareness.

Enhancing survivability relates to protecting crews and soldiers. As mentioned earlier, LRAS3 enhances survivability by providing long-range target acquisition capabilities outside the capabilities of threat weapons systems. In other words, it provides standoff between the individual operating the LRAS3 and the threat weapons system. In addition to providing the crew with standoff, it allows the crew to rapidly forward enemy target locations, thereby providing early warning to adjacent and higher units. The target information allows friendly forces to mass weapons effects based on the target information provided by the LRAS3. The ranges at which the crews acquired, detected, and identified targets depended on the weather, terrain, target type, and the experience level of the operator.

In addition to enhancing crew survivability, the LRAS3 greatly enhanced the lethality of the 3d Infantry Division. When accurate targeting information allows for the massing of friendly weapons' effects, a transition occurs from survivability to overwhelming lethality. Calling for close air support, indirect fires, or providing target location for maneuver units to close with and destroy enemy forces resulted in enhanced lethality.

The LRAS3 was also extremely effective in calling for fire support. According to those interviewed, the vast majority of fire missions were called by scouts with LRAS3. A number of soldiers related experiences of identifying an enemy target, calling for fire, and having the first round impact and destroy the target. According



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to most of the individuals interviewed, this first round impact occurred for a majority of the fire missions.

Those individuals who experienced the opportunity to call for fire support and CAS realized the potential value of an LRAS3 enhanced with a laser designator. One BRT commander felt that during one particular CAS mission, a great deal of collateral damage could have been prevented if his unit had an effective designator. He described the difficulty with trying to talk a pilot onto an enemy target.

The crews interviewed recommended an improvement to the system by having the direction to the target provided in both degrees and millimeters. During the fire mission, the fire support element (FSE) would require the direction to target be provided in millimeters before the mission would be fired. The scouts obliged by converting to millimeters but felt it would be extremely helpful if the LRAS3 would provide the conversion. However, they also wanted to maintain the direction in degrees. When communicating within the unit or with other maneuver units, the scouts preferred reporting enemy target

direction using degrees. Having the system provide "mils and degrees" simultaneously is the desired endstate.

The LRAS3-equipped scouts worked very effectively with maneuver units, as they could pass target information to Abrams and Bradley Fighting Vehicle crews. In one particular incident, a tank crew identified an Iraqi engineer vehicle employing a minefield; however, the tank crew could not obtain a range to the target. The tank crew requested a range from the scouts. An LRAS3 crew identified the target, lased it for the far-target location, and passed the information to the tank crew. The tank crew then fed the range information into the computer and fired the first round, destroying the target.

There were numerous accounts of effective coordination between scouts and maneuver units based on the far-target acquisition and location capabilities of the LRAS3. Scouts usually avoided engaging enemy vehicles/targets with their own direct fire weapons systems. The scouts either used indirect fire or passed the threat target information to maneuver units. The effectiveness of the LRAS3 allows scouts to maintain this technique.

The LRAS3 appeared to be very reliable. Most, if not all, crews interviewed stated they had operated the LRAS3 continuously during the entire operation — 24 hours a day, 7 days a week, for 21 days. Operators who did experience a system failure found that merely recycling the system power corrected the problem. As far as operating the system, most operators used the system primarily in the FLIR mode and very seldom used the day TV mode. Personal preference varied the response.

The LRAS3 also has the capability of being dismounted on a tripod and powered by batteries. The interviews revealed only one incident when the crew dismounted the system. This occurred at Baghdad International Airport where a crew mounted the system on top of the balcony of the airport's control tower. They stated that this worked very effectively, and the crew experienced the same lethal results as previously discussed. In general, it appears the division moved so rapidly that it was not feasible to dismount the system. However, this may very well change as the unit's mission evolves in Iraq. It may now be more feasible and desirable to dismount the system in an urban environment for security operations.

During fielding of the LRAS3, a battery charger was issued and installed on each LRAS3-equipped vehicle. The charger on the move (COTM) proved to be very versatile and useful for charging other weapons systems' batteries. The scouts used the system to recharge the thermal weapon sight's batteries continuously and effectively.

During the interviews, potential product improvements were identified. Two recurring suggestions for product improvements warrant immediate attention. The first would remedy a conflict involving the amount of clearance between the mounted weapons system and the LRAS3. There are three different types of weapons systems that were mounted on the LRAS3-equipped vehicles: the MK19, the M2 .50 caliber, and the M240B. The MK19 seemed to present the greatest conflict, especially when attempting to reload the weapon. Because of this conflict, the gunner/LRAS3 operator must climb out of the hatch, stand on top of the vehicle, and lean over the edge of the vehicle while sliding a 60-pound ammunition can into the feeder tray. The conflict was not as great for the other weapons systems; how-

ever, there was a reported problem with an armor protection plate that was mounted on some of the vehicles. This additional armor protection plate, mounted in front of the operator, also restricted weapon movement due to the conflict with the vehicle-mounted yoke.

In addition to the movement conflict between weapons systems and the LRAS3, many of the operators felt the LRAS3 created a severe blind spot at the 2 to 3 o'clock position. A suggestion recommended offsetting the sensor at 90 to 180 degrees from the weapons system.

Another suggested improvement was to provide the vehicle commander with a flat panel screen. This would eliminate the commander and operator changing positions to allow the commander to verify the target before engaging the weapons systems. This improvement would save valuable time and effort during combat operations.

The 3d Infantry Division conducted highly successful operations in Iraq. The victory was a result of the dedicated leaders and brave soldiers of the 3d Infantry Division. The soldiers of the 3d Infantry Di-

vision displayed an ability to implement the latest technology into current operations. Their experience with LRAS3 was successful and they provided valuable information to future users and material developers.



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Call for Fire Trainer

by Sergeant Charles L. Tremel Jr.

It seems as though call for fire is one of the most important, yet perishable skills, that a 19D cavalry scout possesses. For scouts serving in the Reserve Component, coordination of platoons, drill schedules, training sites, and ammunition, make it especially difficult to maintain proficiency in this task. Nothing is more frustrating than preparing for a live fire or training set, fire observation (TSFO) and have training cancelled at the last minute. This article describes a trainer that is not only low cost and portable, it also allows variety and flexibility in training.

Preparation

You will need the items listed below:

- 1 armored fighting vehicle model. I recommend either 1/35 or 1/72(1/80) scale. These scales are well detailed, inexpensive, and easily purchased on the civilian market. 1/35-scale models can also be requested through the training aids support center.
- 550-cord or twine. The length needed depends on the scale of the model being used. 150 feet of 550-cord is needed for 1/35 scale.
- 10 to 20 marker flags. These flags are used to mark underground lines. They can be purchased at a local hardware store and can either be stuck straight into the ground or bent at the bottom to form a foot.
- 2 to 3 sets of M22 binoculars. These will remain at the observation post (OP) for the instructor and observer.
- 2 manpack or civilian FRS radios. One will stay at the OP and one will go downrange with the assistant instructor.
- Assistant instructor. The assistant instructor should have a thorough knowledge of call for fire.
- Optional items. A map of the area, which should be 1:50,000 scale; an easily identifiable item to be used in shift-from-known-point missions.

Now that everything has been gathered, let's begin. Cut the 550-cord into two

equal lengths and tie them together with a knot at their midpoints. Each of the four strands must be marked at 100 *scale* meter intervals, working out from the center. In 1/35 scale, 100 scale meters equal 2.9 actual meters. Measure this length and tie a knot. Repeat this process three more times until 400 scale meters are reached. After completing the first strand, repeat the process on the remaining three strands. Trim any excess from the ends of the strands. When the strands are laid out on the ground they will form a large crosshair. Each arm of the crosshair will be 400 scale meters long with a knot designating each 100 scale meter increment, as shown in Figure 1.

Setup

The time-consuming part is done. The instructor now needs to choose a large open area as the training site where he will establish his OP. Once this area is selected, spread out the crosshair in front of the OP. Place the model at the center of the crosshair and determine the scale



range from the OP to the model using the width-over-range-equals-mils (WORM) method. This is an important step. One goal of this trainer is to teach field expedient range estimation, in the event you do not have laser range finders. Knowing the range also allows the instructor to ensure that the observer is using the proper observer target (OT) factor, which is the distance from the observer to the target expressed in thousands to the nearest hundred (6300 meters = 6.3). At this point, a known point can be added and ranged to allow for shift-from-a-known-point missions.

The instructor must now decide if a map will be used and, if so, what kind will be used. The first option is to use the actual 1:50,000-scale map of the area. If this map is used, everyone must realize that the terrain on the map will not match the terrain seen through binoculars. The second option is to draw a scale map of the terrain that is seen through binoculars. Using this option severely limits the portability of the trainer. The third option is to eliminate the map and invent any grid coordinates that are called over the radio.

The first option, if the map is available, is a way to test the observer's map-reading skills. He first determines the position of his OP on the map. Once distance and direction to the target are determined, they are plotted as "values" on the map to determine the simulated grid coordinates of the target.

Training

Now the observer can begin training. The assistant instructor goes downrange with a radio and the marking flags. He will become both the fire direction center and the guns.

The instructor begins to walk through a grid mission. The observer locates the position of the OP on the map. He then locates and identifies the target and gives the instructor a blue one (spot) report. The observer then uses the compass to determine the direction and the WORM method to determine the distance to the target. These values are plotted on the map to determine the target's grid coordinates. Remember, the values plotted to the target represent the point where an actual target would be. It is not the position of the model on the ground. This can be confusing.

The observer radios the fire mission, using the proper format, to the assistant instructor downrange, while the instruc-

tor listens and verifies the information. Once he receives the mission, the assistant instructor radios the "splash" of the first round to the observer while planting the first marking flag. We initially marked the rounds far off target to force the observer to call corrections. The observer begins to correct from this initial impact point. The assistant instructor uses the flags to mark the impact of each correction. For instance, to the assistant instructor, "left 200, drop 100" translates to, "left 2 knots, drop 1 knot, and plant the flag." The instructor uses his binoculars to ensure that the corrections are accurate. Once the 100m bracket is broken, the observer makes the final correction, calls a fire for effect, and ends the mission.

When the instructor is satisfied with the knowledge of grid missions, polar-plot and shift-from-a-known-point missions can be practiced. The instructor can use these missions to teach a large variety of subjects, including methods for determining direction and estimating distance, proper use of the OT factor, types and proper use of bracketing techniques, the effect of angle T on corrections, and how to use hand measurements to determine angular deviation. This process continues until all observers have been trained to the instructor's satisfaction.

Although I have not tried this adaptation yet, it is possible to use the trainer to simulate night fire with one-gun illumination. Micro chemical lights can be taped to the knots on the 550-cord to mark the 100 scale meter intervals. If properly executed, the chemical lights will remain invisible to the observer, but will allow the assistant instructor to use the intervals to properly mark corrections. A flash-light can be used to simulate the illumination round. "Burn time" depends on the type of weapon being simulated. The instructor can train corrections for height of burst and adjust the illumination round to within 200 meters of the target.

This call-for-fire trainer is very simple to use, inexpensive to manufacture, and is effective. My platoon used a 1/35-scale trainer, but it is very large and most easily used outdoors. We have also used a 1/72-scale trainer on the drill floor. The

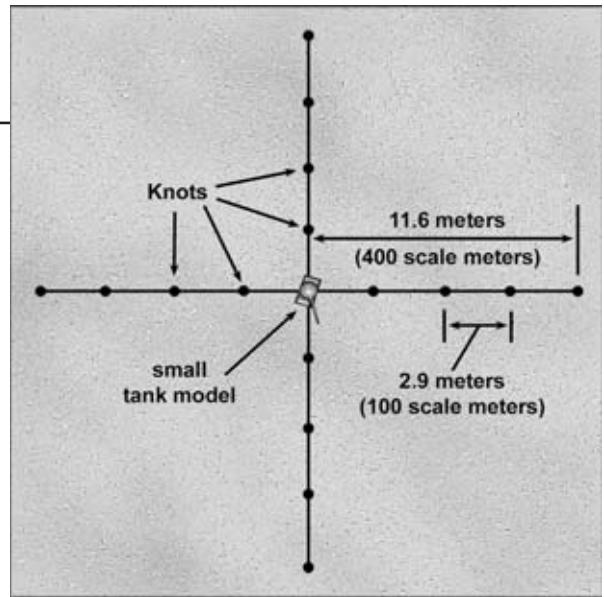


Figure 1

two can be used together to engage multiple targets. The trainer does have a few disadvantages. The observer cannot determine direction by scaling from a map. Estimating distance is limited to the WORM method. Flash-to-bang time, laser ranging, and map estimation cannot be used. Even with these few drawbacks, the trainer works.

Each platoon can determine what standards to use during evaluation. The instructor can test on a variety of tasks, including call for fire, estimate range, use of reports, radio telephone operating procedures, map and compass skills, and armored fighting vehicle identification (AFVID). With the large variety and detail of models in both scales, it is very easy to expand the AFVID aspects of the trainer. It is also easy to incorporate the trainer into other missions and training (a dismounted patrol to the OP site or expanding on establish OP procedures).

I am still refining the concept of the trainer and will keep everyone informed of its progress.



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M1A1 Tanks and Fragmentary Ammunition

by Gunnery Sergeant William J. Orr, USMC

The lethality, maneuverability, and shock effect of the M1A1 Abrams main battle tank is unparalleled throughout the world. When manned by a well-trained, aggressive crew, there are neither surfaces that it cannot overcome nor gaps that it cannot exploit. These strengths have been proven throughout several combat engagements, to include those most recently in Iraq. However, since these attributes are now known the world over, perhaps the Abrams' weakness could be classified by the way that the enemy chooses to defend against it. Potential adversaries are quickly learning, or have been studious of the lessons that others have learned, about the implications of facing one of these iron monsters head to head, tank versus tank. In future conflicts, the enemy will assemble in smaller antiarmor teams and will employ their weapons in a manner

that uses maximum standoff capabilities. These teams will undoubtedly create a dilemma for the Abrams mostly because of the limitations of the main gun ammunition; the Abrams does not have the capability to effectively engage these areatype targets beyond the ranges of its machine guns. A high explosive fragmentary round will be required for the M1A1 Abrams to continue garnering success during future combat operations.

The main gun ammunition load of the M1A1 consists of 120mm rounds with armor-piercing, fin-stabilized discarding sabot (APFSDS), high-explosive antitank (HEAT), and/or high-explosive multipurpose antitank (MPAT), which are designed to destroy various antiarmor capable targets. Such targets include armored vehicles with powerful antitank (AT) arma-

ment, such as tanks and infantry combat vehicles, antitank guided missile (ATGM) systems, antitank infantry weapons, and attack helicopters fitted with ATGM systems. APFSDS (kinetic energy) is primarily used to defeat main battle tanks, while HEAT or MPAT (chemical energy) rounds with point initiating base detonating (PIBD) fuses are used to engage other antiarmor capable targets that often turn out to be more dangerous than combat vehicles and are more likely to appear on future battlefields. U.S. Marine Corps tankers experienced this more prominent threat during recent combat operations in Iraq.

The 1st Tank Battalion, 1st Marine Division, experienced the limitations of the MPAT round on multiple occasions during the 1st Marine Expeditionary Unit's

offensive operations in Iraq. The tank gunner asserts that he engaged a rocket-propelled grenade (RPG) team at a range of 2,000 meters in a bunker complex near the city of Al Kut with a MPAT round. He was surprised to find that immediately after the impact destroyed the bunker, several nearby Iraqi troops (within 30 meters) were able to stand and run from the site. As the troops fled to the north, passing other bunkers, additional soldiers joined in their retrograde. At their consolidation point, they culminated in a loosely dispersed group of approximately 30 soldiers. Again, the gunner engaged with MPAT, firing directly into the center of the troop mass, only to be further disappointed with the outcome. The blast concussion and the fragmentary effects of the MPAT were too negligible to produce his desired effect, which was target destruction.

When faced with an area target such as the one in this scenario, the Abrams main gun ammunition is deficient in its ability to inflict significant casualties. The high-explosive effect of chemical energy, shaped-charge projectiles will not always defeat every antiarmor capable target or troop mass. This is due to the physical characteristics of the shaped charge. Though effective in penetrating armor, the concentrated blast area formed during the contact initiation of the HEAT and/or MPAT projectile generally does not fragment antiarmor capable targets or troop masses located in or around the area of detonation. These characteristics would explain why the troops engaged were not destroyed.

Ammunition used by U.S. tanks in the not-so-distant past, such as the M60 series, had the capability of engaging area targets with the main gun. Based on lessons learned in the early years of the Vietnam War, several 105mm main gun rounds were developed. Among these are the M393A2 high-explosive plastic with tracer (HEP-T) and the M494 antipersonnel with tracer (APERS-T), rounds currently used by the Israeli Defense Forces (IDF). The HEP-T may be used against troops when blast concussion and fragmentation is desired.¹ It can be used against buildings and crew-served weapons emplacements at ranges beyond 2,000 meters. Additionally, HEP-T has a greater blast, concussion, and fragmentation effect than the current HEAT or MPAT rounds. APERS-T may be used against troops in the open at ranges from 200 to 4,400 meters. It consists of 5,000 sub-

projectiles (flechettes) that disperse in the target area. The round earns its "beehive" nomenclature due to the obvious swarming effect of the subprojectiles. The lethality of this round was recently demonstrated in the West Bank when an Israeli Defense Forces tank fired in a busy city center, killing eight and wounding over 100 people. The ratio of casualties inflicted related to the expense of ammunition was on the side of economy of force.

Other foreign militaries, namely the British, currently use a round that incorporates both features of the aforementioned rounds with their Challenger-series tanks. The 120mm high-explosive squash head (HESH) round has combined the plastic explosive advantages of the HEP-T and, to some degree, the fragmentary effects of the APERS-T. HESH uses shrapnel projectiles with an axial distribution method, thereby significantly improving the shape of the lethal radius and ensuring more effective engagement of antiarmor capable targets than the Abrams' HEAT or MPAT projectile. Additionally, this round can be fired in an indirect mode, similar to artillery rounds, giving the Challenger flexibility to reach the enemy beyond the tank's limited direct fire ranges. Additional information about the Challenger-series tanks and armaments is available at <http://www.janes.com/>.

The need for tanks to have fragmentary capability has long been recognized by Israel, a country that is currently fighting the types of battles that the U.S. is most likely to encounter in the future. To defeat targets, such as antitank teams, Israeli Military Industries have developed a 120mm APERS round and the more advanced antipersonnel, antimaterial (APAM) round. Each of these rounds contains six individually fused submunitions. Each submunition contains 500 tungsten cubes, and the case is scored internally to increase fragmentation. When fired in the antipersonnel mode, these submunitions are ejected over the top of the target, where they detonate sequentially, providing a unique top attack kill mechanism. When fired in the antimaterial mode, the fuse functions in a point detonating mode, and all six munitions detonate simultaneously, making it effective against bunkers and concrete walls. The round is also effective against light armored vehicles, and can penetrate over 25mm of rolled homogeneous armor (RHA) before the submunitions detonate, providing behind armor

effects. This round is currently in use by the IDF.

Developing and fielding an M1A1 version of this 120mm high-explosive fragmentary round with the option of airburst fusing would considerably increase the effectiveness of fire against emplaced ATGM crews, AT grenade launcher operators, and hovering attack helicopters. It would also cover exposed manpower, personnel wearing body armor, and soft-skinned and lightly armored targets having a lower level of protection against top attack.

It is inevitable that U.S. forces will soon find themselves fighting a well-organized army in areas other than open, rolling terrain. In an area with potentially large troop concentrations and dense vegetation, such as a North Korea, fragmentary ammunition would be a force multiplier. It could only enhance the shock effect of the Abrams and inflict serious casualties on a massed enemy. During military operations in urban terrain (MOUT), this ammunition, coupled with the accuracy of the Abrams fire control system, could give the commander more flexibility for use of this on demand, direct fire artillery-like shell. In fact, the possibilities are nearly limitless when envisioning the uses of such ordnance with the Abrams main battle tank. Having the capability of fragmentation will ensure success of the M1A1 during all future operations.



Notes

¹U.S. Army Field Manual, 3-20.12, *Tank Gunnery (Abrams)*, U.S. Government Printing Office, Washington, D.C., 5 May 1998.

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to practice constantly. They will never be employed in combat as units.

I recall during a training battle, driving up to an OPFOR battalion commander (a captain) who had just deviated from the brigade plan and defeated a counterattacking mech-heavy task force. It was a great move, and I conducted a mini after-action review with this infantry captain. He said he probably would not have deviated from the plan, albeit within commander's intent, nor done so well his first six rotations! This OPFOR captain had more opportunity to maneuver heavy forces in training in 2 months than most CONUS company commanders get in 18 months.

If the leaders of a training center have a propensity to focus on planning as the root cause of defeats, the challenge is further compounded.

It is no accident that 3d Infantry Division (a legacy division when they executed Operation Iraqi Freedom) has consistently had one of the best home-station training programs in CONUS, with exceptional emphasis on multiple integrated laser engagement simulator (MILES) gunnery, reconnaissance, and maneuver.

I am realistic enough to know the Army as an institution will never formally embrace an abbreviated planning process such as the one Major Salas suggests. I only hope your readers are not so distracted by his comments on planning that they lose sight of his real message: Let's do more maneuver training at maneuver training centers. It is the only place we can do this sort of training. When I commanded a tank battalion in Germany, we were fortunate to do four Combat Maneuver Training Center rotations (two OPFOR and two BLUEFOR). The first two were relatively unsuccessful — we simply were not trained. During the last two, we had a chance to conduct training at Hohenfels at least a week prior to the rotation. What a huge difference that made.

PHILIP ALLUM
U.S. Army, Retired

Organic Combined Arms — A Better Way to Reorganize

Dear *ARMOR*,

Reorganizing the heavy division to include more maneuver brigades is a worthwhile experiment (although we might be so bold as to call them regiments). However, I am dismayed at one of the courses of action under consideration: dismembering the cavalry squadron. The divisional cavalry squadron is the lowest echelon at which true combined arms exist. The value of organic and habitual relationships between tanks, Bradleys, and helicopters cannot be overestimated. Recently, the Army placed increasing emphasis on intelligence, which is useful at the company commander's level. Pulling the OH-58 Kiowa Warriors back to divisional control represents a step in the opposite direction. The synergy, which allows a pilot to rapidly direct powerful ground forces onto fleeting targets, will be replaced by yet another frustrated observer trying to push information

through the chain of command as an opportunity vanishes. However units are reorganized, the emphasis should always be toward organic combined arms rather than temporary task organizations.

JOSEPH E. BERG
CPT, U.S. Army

"Hill 755" — A Different Story

Dear *ARMOR*,

I read Rod Frazer's article, "Hill 755 — 15 Days to the End of the Korean War" in your November-December 2003 issue. I understand that the story was taken from an article which originated in a newspaper in Montgomery, Alabama, and was verified with the author of the article, Rod Frazer. There are, however, several glaring errors in the article.

I would like to quote some of Rod Frazer's comments and then give you the corrections:

"While on Hill 755, I visited each tank and met the tank commanders (TC) and crews of our five M46s. I was the TC on one tank, as well as the platoon leader, and had the responsibility for everyone." Rod Frazer was not a platoon leader in C Company, 140th Tank Battalion, 40th Infantry Division in July of 1953, specifically during the action on Hill 755 as described in his article. The following were the four platoon leaders: 1st Platoon, Richard D. Rosenfeld; 2d Platoon, Arthur H. Dillemoth; 3d Platoon, James S. Duncan; and 4th Platoon, Richard L. Murnighan. There were no tanks from C Company assigned to Lieutenant Frazer, nor did he borrow any tanks from any of the platoon leaders in C Company. My platoon was on Hill 755 and we had only three tanks, not five, as quoted in Mr. Frazer's article. The other two tanks in my platoon were under the command of Sergeant Woody Koontz and were positioned on another hill a mile away. There were no other tanks on Hill 755.

"My first tank on 755 had a good crew; ... Corporal John Henry Shelly was the gunner ... Corporal Charlie E. Hux was the bow gunner; Kowalcheck (called Pollock by the men) was the driver..." These men were part of my crew on my tank, number 66, and "Kowalcheck" (his name was Kowalczyk) was not even in my platoon. As a matter of fact, he wasn't even in C Company. At the time, he was a member of B Company. "The Pollock" was the loader not the driver and his name was Swierczwinski.

"The disabled tank blocked the narrow trail. I ran to it ... Hearing noise underneath the vehicle, I crawled there to find the body of the gunner ... and the badly wounded driver ... Still under the tank, I took off Kowalcheck's belt and made a tourniquet for his leg ... He was crying, but my attention calmed him." At the time these men were hit, I was with them outside the tank. It was I who pulled them under the tank. Later Private Robert J. Vreeke (a jeep driver who was assigned to LT Frazer) and a Korean medic came to the tank and evacuated Swierczwinski, who was still alive. LT Frazer was not there.

"Communications were a constant source of frustration; our radios never worked." I don't know which radios LT Frazer was trying to use, but the ones on the tanks in my platoon were operating quite well. I talked daily to the CP, my other tanks, and the light section.

These corrections reflect the combined remembrances of the four platoon leaders mentioned, who believe the record should be set straight.

ARTHUR H. DILLEMUTH

Yes, TF 1-63 Armor Was the First Unit to Air Insert M1A1s

Dear *ARMOR*,

Captain Edward Cox commented in the January-February 2004 issue of *ARMOR* that 1st Battalion, 35th Armor (1-35) was the first to air-insert M1A1s in support of combat operations, not Task Force (TF) 1st Battalion, 63d Armor (1-63). While TF 1-35's contribution as part of Task Force Hawk is well documented, that unit's movement was into a secured allied country. A ground movement and subsequent combat operations in Kosovo followed their air movement. On the other hand, TF 1-63 was the first U.S. unit to air-insert armored systems directly into combat, in this case into the Basrah airfield in Northern Iraq. The only other time an armor unit was air-inserted directly into combat was by the British, using gliders during World War II.

PATRICK T. WARREN
LTC, U.S. Army

No, the Honor Belongs to 1-64 Armor

Dear *ARMOR*,

I read Major Maddox's article, "Checkmate on the Northern Front," in the September-October 2003 issue of *ARMOR*, claiming TF 1-63 Armor was first to air land M1A1s in support of combat operations. This occurred last year in Northern Iraq. I also read the letter in response by Captain Cox in the January-February 2004 issue of *ARMOR*, claiming the same feat with 1-35 Armor, as part of TF Hawk flying into Tirana, Albania, then Skopje, Macedonia, in 1999, I believe. I disagree. The rightful owner of this honor, if it can be called such, is TF 1-64 Armor.

The Desert Rogues flew the Immediate Ready Company and the Division Ready Force (Fly Away), and no less than 10 M1A1 tanks, from Fort Stewart, Georgia, to land in Mogadishu Somalia, to conduct combat operations during Operation Continue Hope II. Our tanks began landing at the Mogadishu airport just days after the famous battle of 3 and 4 October 1993. That battle, and its lack of armor, was the reason we went. The first time the M1A1 tanks engaged in combat was Operation Desert Storm and I don't believe any flew into theater. The next time was in Somalia, the Marines first, but they did not fly in, TF 1-64 Armor did.

PAUL D. TERRELL
MAJ, U.S. Army

REVIEWS

Transformation Under Fire: Revolutionizing How America Fights by Colonel Douglas A. Macgregor, Praeger Publishers, 2003, 320 pp., \$34.95 (hardcover)

In *Transformation Under Fire: Revolutionizing How America Fights*, Colonel Douglas Macgregor examines the Army's failure to transform. Instead of delaying transformation, he argues, the war leaves us little choice but to reform immediately. Macgregor maintains that recent Army attempts at transformation, relying on the Stryker and a distant Future Combat System, fail to address the heart of the Army's problem: its anachronistic and cumbersome organization at the tactical and operational levels. Macgregor, however, spends the majority of his book proposing a solution to the problem: an immediate reorganization of the Army's combat units and the fielding of currently available technology that will quickly address its tactical and operational needs.

Macgregor's ideas are not new. A Gulf war veteran who fought in the battle of 73 Easting, Colonel Macgregor went on to command 1-4 Cavalry at Fort Riley, Kansas. While serving there, he recognized the need to restructure the Army to meet the post-Cold War demands. He likened the new world order to the American frontier in the late 1800s, which no longer required the mass infantry formations of the Civil War, but a flexible, easily deployable expeditionary force of mounted formations. Macgregor's first book on transformation, *Breaking the Phalanx: A New Design for Landpower in the 21st Century*, lays out in detail his path to structural reform of the Army: forming self-contained 5,000-man units, composed of combat battalions and all of the support required to sustain them in combat (commanded by a brigadier general); elimination of Army divisions, and the formation of Joint Task Forces (commanded by a three-star general) which integrate all services strike (airpower, artillery, and aviation) and maneuver (Army and Marine Corps maneuver brigades) under a single, integrated command structure. Although his ideas received critical acclaim, they went nowhere with the conservative Army leadership.

In *Transformation Under Fire*, Macgregor argues that the "war transforms armies." Now, more than ever, the Army must finally shed its industrialized warfare skeleton, and adapt to the realities of information age warfare. The Army's essential structure has remained unchanged since the end of World War II, while the end of the Cold War necessitates that the Army transform into "an irresistible offensive-maneuver force against a fleeting, mobile enemy." While the Army has recently recognized the need for transformation, it has sought technological solutions at the expense of addressing the fundamental question of organization for joint warfare.

Rather than transforming to meet the Nation's needs, the Army is trying to "do what it wants to do." Macgregor explores the global trends that require a radically different approach to national security issues by the military.

Globalization has severely disrupted social structures in much of the developing world, and brought America plenty of new enemies in all corners of the earth. The complete dominance we enjoy in world power has forced our new enemies to resort to unconventional attacks to inflict harm on U.S. interests. This requires a radically different approach from our armed forces. The current administration has developed preemption as the national security strategy to deal with emerging threats — a strategy that requires early decision in a crisis. The Pentagon has switched to an "effects-based" strategy, which strives for early victory in conflicts by rapidly striking the enemy's strategic center of gravity. The Army's current attrition warfare structure does not position it to conduct rapid, decisive operations in support of the "effects-based" strategy.

Macgregor goes on to sketch out an operational reorganization into joint force headquarters, which integrate Army maneuver capabilities with strike capabilities of the Air Force and Navy. The Army would reorganize its core service capabilities into specialized modules that would support the joint task force mission. By cutting out the divisional structure and merging all branches of service at the joint task force level under a three-star general, the armed forces would have an organization capable of executing operations in a truly joint fashion with greatly reduced command decision cycles. Macgregor argues that the Army must create "network centric" organizations immediately. Combat groups (consisting of 5,000 soldiers) would be capable of independent, dispersed mobile warfare, rather than tightly scripted, coordinated mass maneuvers favored by divisions and corps. To forge truly effective combat groups, Macgregor urges training cycles based on unit manning concepts currently under consideration by Army leaders.

Macgregor reserves his last chapters for the upper echelons of the Army and what must change to effect true change. He calls for realignment of our combat power, shifting troops away from Cold War bases to forward bases that enable power projection and expeditionary warfare. He calls for returning units to the United States and rotating them through forward bases to provide forward capabilities to national leaders. Additionally, he argues for significant streamlining of the Army's command structures in Europe and Korea. Macgregor goes on to advocate a new, streamlined Army command structure to equip the new force, eliminating such headquarters as TRADOC and merging others. Bureaucracy and entrenched interests are the main impediments to effective, rapid transformation. Macgregor lambastes the Army's promotion system that rewards officers who are "yes-men," while punishing officers with bold, forward-thinking ideas. As an example, he points out that selection for general requires the unanimous consent of all 17 general officers on the board; essentially, a colonel who aspires to serve at the higher ranks must keep his nose clean and not upset anyone with his bold thinking. Finally, he takes the Army to task for remodeling existing

brigades, divisions, corps, and armies with new systems, while passively waiting for technology that is 10 years in the future; instead, they should be restructuring now, using existing technology to carry the Army through the battles of the next 15 years.

Macgregor's book is in the best tradition of military theorists, whose ideas transformed armies to meet the challenges of WWII: Hans von Seckt, B.H. Liddell Hart, Charles de Gaulle, and Heinz Guderian. Macgregor presents the first coherent view of how the information age should transform the way we organize for war. The question now remains whether the U.S. Army will heed his calls for true reform or continue to cede more and more of its missions to the Marine Corps, which has embraced expeditionary warfare. Macgregor takes to task the leadership culture that stifles change; but more importantly, he sketches out a realistic, immediate path to true transformation that will vault the Army out of exile at the Pentagon and back into the forefront of the Nation's fight in the war on terrorism.

CPT SAMUEL COOK

Bush At War by Bob Woodward, Simon and Schuster, New York, 2002, 376 pp., photos, index, \$28.00

This book details the Bush Administration's plan to conduct the war in Afghanistan. The pressures shortly after 11 September 2001 to find and bring to justice the people responsible for this tragedy were enormous. Bush did not want a hasty and ill-thought-out campaign.

President Bush stated he did not want a million-dollar missile going into a five-dollar tent. He wanted a well-thought-out plan, which would minimize loss of life to civilians and our own military. Concurrently, there was a humanitarian mission planned to coincide with military operations. Previously, there were no bases near Afghanistan available to the United States. The logistics and diplomacy needed to secure bases for our forces was extremely difficult. Afghanistan is in Russia's backyard, and naturally they were concerned with our presence. To make things more difficult, the press equated Afghanistan with Vietnam and often used the word "quagmire" to describe a war in that country.

Woodward authors the first book that goes into detail about the CIA's role in that war. The CIA is secretive, but their accomplishments should be noted. One of the CIA operatives earned the Intelligence Star posthumously, which is equivalent to the Silver Star. CIA operatives and Special Forces worked together for the first time. President Bush gave broad authority to the CIA and the military to bring the guilty to justice. I often wonder why so many of the Taliban and Afghan tribes switched sides in favor of the United States. The CIA gave out over 10-million dollars in cash for them to become our allies. In Afghanistan, the going price for a brigade was \$50,000. One Afghan

leader was balking at the amount. A Special Forces operative directed a precision-guided munition to explode near his command post. The Afghan leader called the next day and dropped his price to \$40,000. It is often joked that loyalty in Afghan changes with who is paying.

I learned a great deal about President Bush. The press release from *Bush at War* states it has over 15,000 words from direct quotes. Woodward had the administration's support in writing his book. I liked the quotes from President Bush that reflect his feelings about 11 September and the war in Afghanistan. They bring to life the presidency of the United States.

The only change to this book I would make is that I would call it *Bush at War, Part I*. I am positive that Woodward can accurately write the story of our nation's recent war with Iraq. *Bush at War* makes interesting reading. Take the time to read *Bush at War*. I am sure you will learn more about how the United States will conduct future warfare and diplomacy.

ERIC SHULER
CPT, U.S. Army

Wilson's Ghost: Reducing the Risk of Conflict, Killing, and Catastrophe in the 21st Century by James G. Blight and Robert S. McNamara. Public Affairs, New York, 2003, 304 pp., \$14.00 (paperback)

When a man hath no freedom to fight for at home, Let him combat for that of his neighbors; Let him think of the glories of Greece and of Rome, and get knock'd on the head for his labours. To do good to mankind is the chivalrous plan, and is always as nobly requited; Then battle for freedom wherever you can, and, if not shot or hang'd, you'll get knighted.

— Lord Byron

In their new book *Wilson's Ghost*, Robert S. McNamara and James G. Blight propose that the 21st century can avoid repeating the carnage and conflict that was the cornerstone of the 20th century.

Wilson's Ghost was inspired by former President Woodrow Wilson's idealism and vision of collective security in the post-World War I *Peace without Victory* world. The authors propose an agenda based on nuclear disarmament, multilateral security cooperation, and integration of non-Western great powers into a new world order. In the view of the authors, returning to the Cold War diplomacy of realpolitik is shortsighted and not compatible with the new interconnected world global economy. Nations like China, India, and Russia must be as fully integrated in the family of nations, as were Germany and Japan following World War II. In dealing with the epidemics of failed states and genocide, the United States should demonstrate *realistic empathy*, abandon unilateral preemptive intervention, rely more on the leaders of alliance partners like France and Germany, and contribute to a United Na-

tions capable of deploying its own 9-11 force. Blight and McNamara argue that the United States should avoid building an antimissile defense system and phase out all nuclear weapons. In a recent interview following the publication of *Wilson's Ghost*, McNamara stated that a central argument in his book is that the United States must avoid seeming arrogant. He warned against high-minded, high-handed, overwhelming American pride and American arrogance. Interestingly, the same proposals espoused by Blight and McNamara are also found in the 2002 National Security Strategy (NSS) signed by President George W. Bush. Many of Wilson's ideas are found in the NSS: A world safe for democracy, institutions with teeth, and the elimination of tyranny.

Problems with Bright and McNamara's thesis include the assumption that nondemocratic states are willing to accept the economic and social ideals that come with democracy. Since the end of the Cold War, many states who have embraced democracy have done so because Western nations (the United States in particular) were willing to use their great power status both economically and militarily. The Soviet Union, for example, became a democracy only because President Ronald Reagan was willing to stand up against the Soviet empire. Second, had Wilson been alive on 11 September 2001, he would have probably agreed with President Bush's unilateral preemptive intervention policy. Both Bright and McNamara ignore the fact that Wilson in 1916 ordered U.S. troops into Mexico following a terrorist attack led by Poncho Villa. Finally, *Wilson's Ghost* is replete with McNamara's constant *mea culpa* for his role in the Vietnam War. As political commentator Anne Coulter wrote recently, "McNamara's [own] dispute-resolution technique, which consists of starting a ground war in a jungle, losing the war, condemning millions of people to live under communist tyranny, and then casually announcing 25 years later that you knew the war was doomed from the start."

Robert S. McNamara was president of the Ford Motor Company, Secretary of Defense to Presidents Kennedy and Johnson, and President of the World Bank. He is the author of *In Retrospect: The Tragedy and Lessons of Vietnam* and co-author of *Argument Without End: In Search of Answers to the Vietnam Tragedy*. He is a board member of the Pugwash Foundation. James G. Blight is professor of international relations at the Watson Institute for International Studies at Brown University and is a renowned author and editor of numerous books on the recent history of U.S. foreign policy, including *Argument Without End*.

I recommend *Wilson's Ghost* as a primer for students who wish to learn more about the liberal view of foreign policy. Its chapters are a timely read, given current U.S. operations in Iraq and Afghanistan, and provide strategic planners with some insight on current U.S. national security strategy.

JAYSON ALTIERI
MAJ, U.S. Army

The Road to Rivoli: Napoleon's First Campaign by Martin Boycott-Brown, Sterling Publishing Company, Inc., New York, 2002, 640 pp., \$21.95

In the introduction to *The Road to Rivoli*, Martin Boycott-Brown states that the book "aims to tell the story of the campaign, concentrating on the military aspect. While doing this, it attempts to say something about the experiences of the local civilian population." While accomplishing the first goal, he fails in the second as the experiences of the civilians tend to fade in the later chapters. *The Road to Rivoli* is an exhaustive account of Napoleon's first Italian campaign, focusing on the actions of the Austrian and French armies as they battled across Northern Italy in 1796-1797. The author draws on a wealth of secondary sources, complemented by numerous primary sources in English, French, Italian, and Austrian, giving his work a refreshingly balanced perspective.

Boycott-Brown wastes a great deal of time laying the foundation for the campaign. He uses over 120 pages to explain the basics of Napoleonic warfare, the origins of the conflict, and the nature of the French and Austrian armies. Much of this is not needed, as this is not a book for a novice of the Napoleonic era. Boycott-Brown sticks to his initial aim of telling the military history of the campaign and, unfortunately, provides very little in the way of analysis. Reading the book is not easy, by any means, and appropriate analysis at various points would have made the book more interesting and easier to digest.

However, the greatest fault of the work is the lack of suitable maps and orders of battle. At times, the author details the action down to the regimental and battalion levels, and unless one knows which brigade, division, or corps a specific commander belongs to, one gets lost. The book has 10 pages of maps in the center of the book; however these maps fail to detail any troop movements or positions, making it very difficult to follow the action. To fully understand the situation, the reader is required to have a map of northern Italy in front of him, as well as another book detailing the orders of battle for the campaign.

The Road to Rivoli is not a book for the Napoleonic novice, and even the more experienced reader will have difficulty with this book. On the other hand, if one is looking for a decent account of Napoleon's first campaign, then it is worth the read.

LTC JOHN M. KEEFE
U.S. Army, Retired

Rommel and His Art of War, ed. John Pimlott, Greenhill Books, London, 2003, 224 pp., \$19.95 (paperback)

This is an odd little book, constructed from scraps of primary source material sandwiched between fairly insightful comments from the editor. It covers the highlights of Rommel's combat career from the First World War through his forced suicide in the fall of 1944. When I

say the highlights, I mean that 90 percent of the material covers a half-dozen battles, most of them in the Western Desert 1941-1942. There is precious little about the rest of Rommel's career or about Rommel the man; the closest we come is some not particularly revealing letters to his wife. The material is gleaned from official reports, war diaries, correspondence, and after-action reports, most but not all authored by Rommel.

The value of this book depends on the reader. One completely unfamiliar with the subject would come away with a minimalist understanding of Rommel's technique, but very little idea of the demons that drove this most interesting character. Those with greater knowledge might draw some useful nuggets from the numerous anecdotes and vignettes contained between the covers, some of which are not (as far as I know) printed in English elsewhere. Pimlott's commentary is also valuable; he is no hagiographer, and his judgments concerning Rommel are concise and reasonable.

Overall, however, there is very little new here, and nothing that would cause a reader with even a modest grasp of the subject matter to reassess his opinions. Most of the selections are pedestrian, and one suspects that some have not seen the light of day before for good reason. Most annoying, the selections are not annotated and there are no maps for Rommel's World War II campaigns. For this latter fault, the editor should be boiled in his own correction fluid, as trying to follow the swirling desert battles without a map is simply impossible.

It is tragic that two of the premier generals of armored warfare, Patton and Rommel, did not survive to write their memoirs of the last world war. Rommel's, in particular, would have been most interesting, given his early support of Hitler, his gradual disillusionment, and his literary style. Lacking a memoir, however, there are numerous works available that would give anyone interested a better understanding of Rommel as man and warrior (B.H. Liddell Hart's or David Fraser's for starters) than Pimlott's collection. I would recommend passing this book up and finding something meatier.

LTC STEVE EDEN
U.S. Army War College

Blood Red Snow: The Memoirs of a German Soldier on the Eastern Front by Gunter K. Koschorrek, Greenhill Books, London, 2002, 318 pp., \$34.95 (hardcover)

From the fall of 1942 until May 1945, Gunter Koschorrek, a German soldier, fought on the front lines during the Second World War as a heavy machine gunner and heavy weapons section chief, for the most part in the East against Russia. As he fought, he maintained accounts of his experiences and thoughts during his service, to include periods of convalescence from six wounds. In the turbulent years immediately following the war, Koschorrek's notes were lost, and were only rediscovered in the mid-1990s by a descendant. Upon re-

union with his notes, the former German soldier decided to compile an account, describing his personal experiences in the Second World War. The result, *Blood Red Snow*, is one of the latest in the line of personal histories depicting life during the Second World War.

Koschorrek began his wartime service during the winter of 1942-43 fighting in the vicinity of Stalingrad. Although only rarely fighting in the city, he was in the middle of the massive Soviet counterattack of November 1942 that led to Sixth Army's destruction, and his first few months of combat were spent conducting a desperate fighting retreat in the middle of winter. After his first injury, he served in Italy, battling partisans before returning to Russia, and remained on that front as it steadily receded eastward through Romania and Poland.

Koschorrek's work very clearly is written from the perspective of one who is revisiting memories after a period of many decades, and although this presents certain challenges, it is not necessarily a bad thing. While some of the passages depicting combat are compelling and vivid, many other sections of the book are reflective. A number of events bring to mind other, more recent, depictions of 20th-century combat, both fictitious and factual. His experiences during home leave echo those of Paul in Remarque's *All Quiet on the Western Front*; many of his remembrances of winter combat evoke images from the German movie, "Stalingrad;" and his commentaries on military leadership align closely with those in Sajer's *Forgotten Soldier*. Occasionally, such reflection borders on moral preaching, as when the author discusses hunting partisans and the "killing of the defenseless." For the most part, however, the author's insertion of a modern context on his thoughts and memories is insightful and complementary to the progression of the book.

The strongest passages in the work are those that deal with fighting on the Eastern Front, particularly in the beginning and toward the end of the war. Koschorrek's account of the war's final days is particularly intriguing, as he recovers from his final wound, waiting to discover whether his fate will leave him in the American or Soviet zone of occupation. While the author exhibits a high degree of professional respect for his Russian foes, he voices an equally negative view of the American soldiers he sees, although this latter number is admittedly quite small. In his 3 years of service, Koschorrek never fought against American forces, and only came in contact with them in the last days of the war.

This is an enjoyable book for those readers who are fascinated by personal accounts from history. While not as compelling as Sajer or some of the more well-known personal accounts from the wars of this century, it certainly ranks above average. Once started, it is a difficult book to put down and will find a wide audience among military historians and buffs alike.

MAJ MICHAEL BODEN
CMTC, Hohenfels, Germany

Deception in War: The Art of the Bluff, the Value of Deceit, and the Most Thrilling Episodes of Cunning in Military History, from the Trojan Horse to the Gulf War by Jon Latimer, The Overlook Press, New York, by arrangement with John Murray Publishers, 2001, 356 pp. with illustrations, \$35.00

Pity the soul who finds himself in functional area 30 — the information operations (IO) officer — for he is still a stranger in a strange land. Too often during exercises he finds himself treated much like his predecessors who dealt with electronic warfare: shoved off to the side of the exercise area, and only called on when someone recalls that he is "value added" and essential to being graded as passing the exercise.

Too many seniors still pay lip service to IO in the U.S. Army, lacking a full understanding of the "six pillars and two enablers," which compose the concept in full. The enablers are public affairs and civil affairs, and the pillars are physical destruction, electronic warfare, operations security, computer network operations, psychological operations, and deception. All have to be balanced to provide the desired outcome of information dominance on the battlefield and the goal of increased effects with reduced losses.

This easy-to-read and highly entertaining book is by a former engineer officer in the British army, and brings one of the older pillars of IO into sharp focus. Deception is one of the oldest stratagems used as what we now call a "combat multiplier" and is still one of the most effective, if done correctly.

This book is not so much a linear history of deception as it is a description of deception and how it is applied, with many examples of right and wrong applications. Mr. Latimer considers information warfare to be a subset of deception, which runs counter to U.S. thinking, but he does explain his reasoning, and in some measure, presents a plausible case. Definitions aside, he is emphatic that persuading your opponent to willingly make choices favorable to you is the ultimate goal, and goes on to cover many incidents in history (he does gloss over the Trojan Horse, albeit it was one of the first deception operations that survives, myth or not, to this day).

Mr. Latimer covers the various types of deceptions — visual, aural, sensual, and electronic; and the echelons — tactical, operational, strategic, and local wars and regional conflicts as well as actions against terrorists and nonstate organizations. He has apparently been intimate with the British Public Records Office and has a tremendous amount of information on British and U.S. activities during World War II, to include how many deception plans were run to support D-Day — a total of 36 — and the other activities in the Mediterranean and North Africa.

Part of the book focuses on the changes from the oldest forms of intelligence collection — spies, prisoners, and scouts — and how they

were duped into believing the desired position of their opponents, and how modern intelligence collection via technical means (signal intelligence and imagery intelligence) are both more able to detect deception and more vulnerable to it. Even with multispectral sensors, simple decoys remain effective, and he cites the recent experiences of coalition forces in Iraq (1991) and Yugoslavia (1999) as cases in point.

He also spends some time in the area of "local wars and regional conflicts" and describes some of the problems we are now beginning to face in dealing with nonstate actors such as al-Qaeda. He cites the British experiences in Malaya, Kenya, and Northern Ireland, as well as past U.S. successes, such as dealing with the Huk rebellion in the Philippines in the 1940s and 1950s. He lays out a number of good points needed to deal with nonstate actors.

Mr. Latimer does not seem to be anti-American in his comments about the U.S. forces and the good and bad work they have done in the area of deception operations, but he does point out two particularly egregious examples. The first one is Tet 68, in which American political desires and mistaken beliefs by MACV in Saigon let them accept the massive deception plan created by Vo Nguyen Giap that the Vietnamese were not winning, and were planning to come to the peace table early in 1968, and that the U.S. was dominating the war.

The reality of course, as we know now, was a multipurpose stratagem to accomplish multiple goals. It would demonstrate that the communists were still committed to winning the war, inflict a heavy blow on the Americans and demoralize them, crush the ability of Saigon to prosecute the war and lower their standing in the eyes of the people, and use undesirable "southerners" to carry out the attacks, thus minimizing PAVN losses. MACV agreed with all of the information it saw, as did Washington, and even in the face of local U.S. intelligence reporting to the exact opposite (massive supply buildups, orders for specific attacks, and reorganizations and tasking of VC units), MACV bought the deception plan in toto.

The actual attacks wound up being a total disaster physically for the VC and did not accomplish a single VPAF goal. In retrospect, the Tet offensive turned out to be one of the greatest victories for U.S. arms in the 20th century. But the images of U.S. forces running and piling behind walls in confusion, and the boasts by Washington and MACV that the war was nearly won, combined with the media's increasingly biased and antiwar views of operations in Vietnam, turned this into a strategic defeat for the United States, the like of which it had never known in its history. Mr. Latimer attributes this to the "law of unintended consequences." For example, if you succeed in your goals, things may still not turn out the way you planned, it should have been a massive wakeup call to the U.S. military to not take too much for granted in the light of intelligence reporting to the contrary.

The other major U.S. failing in the eyes of Mr. Latimer is creating and manifesting "intelli-

gence preparation of the battlefield" (IPB), a concept which is absolutely vulnerable to a sharp enemy using deception to delude U.S. commanders into making big mistakes in combat.

IPB basically consists of doing force assessments, such as type, nature, size, tactics, historical activities, and terrain assessments, such as avenues of approach, areas of interest, target areas of interest or kill zones, and plugging them into templates and matching them to enemy activities. Once the basic work is done, it is a matter of waiting for intelligence items to "light up" and plug them into the plan to see where the enemy is in his template. This worked well in testing against computer models in the early 1980s, where the enemy was literally robotic and only did what the computer programming told it to do. However, the "real" enemy (to include the National Training Center) did not do that, even if they did follow doctrinal events.

Mr. Latimer is correct in the fact that there is a high degree of slavishness in the U.S. Army to IPB in many areas. He is also dead on the money when he points out how vulnerable we are to trusting our technical intelligence means to "connect the dots" in IPB and the possibility of complete disaster if we place too much trust in both of them. Having seen both things happen, I concur, and recommend this book to reawaken thinking in how we view the world through military glasses.

STEPHEN L. "COOKIE" SEWELL
CW2, U.S. Army, Retired

The Diaries of John Gregory Bourke, Volume 1, November 20, 1872-July 28, 1876, edited and annotated by Charles M. Robinson III, University of North Texas Press, Denton, TX, 2003, 518 pp., \$49.95

Those who have read his memoir, *On the Border With Crook*, will recognize the name of John Gregory Bourke. Written over a century ago, it is one of the classics of the Indian Wars. An officer of the 3rd Cavalry, Bourke was Brigadier General George Crook's aide-de-camp for 14 years, serving in every major campaign in Arizona and the Northern Plains. A prolific writer, he kept a monumental set of diaries that began when he was a young cavalry lieutenant in Arizona in 1872 and only ended the evening before his death in 1896. Except for published extracts, these 124 manuscript diaries have only been available at the West Point Library and on microfilm. Charles M. Robinson, III has the massive task of editing and annotating the diaries. This is volume 1 of a planned set of 6 volumes.

John Bourke was more than just another cavalry officer in the West who happened to write his memoir. He became interested in the lives of Indians, becoming a respected ethnologist, a devoted scholar of Indian beliefs, customs, and traditions. He was an interested observer of his environment, including in his diaries a number of maps and sketches.

Bourke was born in Philadelphia in 1846 of well-to-do parents, receiving an excellent parochial school education. Caught up in Civil

War patriotic euphoria, he lied about his age and enlisted at 16 in the 15th Pennsylvania Volunteer Cavalry. He earned the Medal of Honor at Stone's River (Murfreesboro), fought at Chocomauga and Chattanooga, and served with Sherman's army in Georgia. Mustered out in July 1865, he entered West Point and graduated number 11 of 39 in the class of 1869. After extensive field duty in New Mexico and Arizona with the 3d Cavalry, in September 1871, he was appointed aide-de-camp to General Crook, new commander, Department of Arizona. It was in this role that he began his diaries.

The first part of this volume covers the period when Crook was commanding the Department of Arizona. This was the land of the Apaches and trouble with them dated from before the Civil War. Soon after Crook assumed command, he launched a general offensive against the Apaches. Although the period lasted from November 1872 until April 1875, when Crook was reassigned, there are 18 months of missing diary (April 1873-September 1874). Nevertheless, in this volume, Bourke provides an excellent account of the campaigning and frontier life.

Crook's next assignment was commander of the Department of the Platte, an area that covered Nebraska, Iowa, Wyoming, Utah, and southern Idaho. Bourke described the trip from Arizona to Omaha, department headquarters, providing an excellent description of Southern California in its early development days, and Utah as it transitioned from the Mormon theocracy. In his new command, Crook faced a powder keg ready to explode. Indian problems went back 9 years when the Indians fought the government to a standstill. Although the resulting treaty with the Sioux tribes ceded much of what is now North and South Dakota, white incursions into the area, especially resulting from the discovery of gold, meant the treaty would not last.

Bourke's diaries cover Colonel R. I. Dodge's Black Hills expedition of 1875. He then leads into the Great Sioux War of 1876-1877, the brutal conflict most famous for the destruction of Custer and five troops of the 7th Cavalry. Crook's column was one of three converging on the Indian encampment and experienced battle with the Indians in the battle of the Rosebud, more than a week before the disaster to Custer's command.

Bourke was an observant and articulate writer. His diaries are detailed and provide one of the best existing word pictures of what life was really like in the West during the Indian Wars. His writing also provides an excellent study of his own changing attitude toward the Indians as he realizes that fault and evil are not all on one side.

Robinson has done an excellent job of editing Bourke's work, as well as providing sufficient background material to allow the reader to place the diaries in proper context. This is the first of the volumes; the overall effort promises to provide a significant addition to the literature of the Indian Wars period.

BG PHILIP L. BOLTÉ
USA, Retired

Resequencing Training for More Battle Focus: The Transformation of 19D OSUT

Commander
COL James K. Greer

In recent months, there has been much talk throughout the Army about changing the entry-level training of our Soldiers. Proposed modifications to make training more realistic and more battle focused primarily center on increasing the length of the entry-level training and increasing the skill set imparted to Soldiers, such as training them not only on fundamentals of fire and maneuver but on urban operations as well. Many of these proposed modifications are steps in the right direction and are long overdue. Unfortunately, many of these modifications require additional resources not yet available. These proposed changes require extensive staffing to determine the impact that drawing on these resources, such as training ammunition, will have on combat operations. It may be some time before any of these changes are made.

So what about the near term? Without additional resources, is it possible to train entry-level Soldiers to standard and prepare them for combat? We believe it is possible and the short-term solution focuses on commanders resequencing training to make it more efficient, more realistic, and more battle focused. This process is already underway at the 1st Armor Training Brigade. The 5th Squadron, 15th Cavalry Regiment (5-15), has the initial entry-training mission for military occupational skill (MOS) 19D Cavalry Scouts. In recent months, 5-15 Cavalry has resequenced and improved training in 19D one-station unit training (OSUT) to ensure the right Soldier with the right skills is sent to the Cavalry Force.

Resequencing training was not done haphazardly and required extensive staffing at squadron, brigade, and post levels to determine the feasibility of each proposal. The first step in resequencing training was prioritizing the tasks trained. There are 176 tasks trained in 19D OSUT, 126 of which are directly related to combat. Given the limited time available to train scouts (16 weeks) we obtained input from all senior officers and noncommissioned officers in the squadron regarding the importance of these tasks. We studied after-



Command Sergeant Major
CSM David L. Morris

in the field during OSUT, a significant increase over the 7 nights previously allocated by the program of instruction (POI). Time allocated for reinforcement training for end-of-phase tests is now combined with time provided for the test to create a 2- or 3-day block of time for commanders to develop the end-of-phase test into an FTX. The events formerly known as STX, CAV stakes, and gunnery have now become an end-of-cycle FTX, lasting 7 days and 6 nights.

When prioritizing and resequencing training, we also created additional training time to reinforce combat critical skills by removing time allocated for training that was not essential. For example, by eliminating 4 hours of time allocated to train antitank mines (which scouts seldom emplace), we have added 4 additional hours of call for fire training. Another example is making a 4-hour block of instruction to train "communication using visual signals while mounted," an enabling objective under the terrain drive lesson. This increases the amount of time each Soldier spends driving a HMMWV and M3 to 1.5 hours — double what it has been in the past. The emphasis is now placed on driving — over terrain and at night — rather than on simply driving laps around a driving course or in a classroom learning visual signals.

While resequencing training pays many dividends, it is still only an interim solution to how we really want to train the future cavalry scout. We have added training the fundamentals of urban combat skills and traffic control point operations, but these additional tasks are not properly resourced in terms of land and ammunition, making it more of a challenge to train Soldiers realistically. Nonetheless, resequencing training in a logical progression is a powerful tool that commanders can use to improve the training of entry-level Soldiers while awaiting allocation of additional resources for training.

Please continue to send feedback to Mr. Joe Pena at:

jose.pena@knox.army.mil

action reviews from recent combat operations and results of the most recent field surveys. Given all of these factors, we prioritized our tasks into "master, know, familiarize" categories.

Prioritizing the tasks trained has allowed 5-15 Cavalry to reevaluate and resequence its master training schedule used for each new scout class. The new master training schedule trains the same tasks as before, but resequences the training to allow our cadre to train important skills up front and reinforce these skills throughout OSUT. Resequencing training into logical progression has led to many improvements in 19D OSUT.

One such improvement is training early the fundamentals of patrolling (week 3 instead of week 12). Training early the fundamentals of patrolling and assembly area procedures allows those critical 19D skills to be reinforced throughout the training cycle. Basic rifle marksmanship has been resequenced to occur later in the cycle and over a longer period of time to provide more time for reinforcement training. Burst fire, night fire, and nuclear, biological, and chemical fire now occur in week 13, so that week 3 will not be the last time a scout fires his individual weapon before graduation.

Another improvement made possible by resequencing is creating additional field time for scouts. This additional time for situational training exercises (STX) and field training exercises (FTX) is made possible by combining many events that were previously conducted in an "admin" environment at the barracks or in the motor pool. 19Ds now spend over 23 nights

“Forging the Future — Lessons Learned From the Last Operational Year”

Preparations for Armor Conference 2004 are well underway at the Armor Center and Fort Knox. Armor Conference 2004 will continue the tradition of providing an excellent opportunity for professional development and discussion on a wide variety of topics, as well as many social events for attendees to enjoy. The 2004 Armor Conference is scheduled from 15-20 May 2004.

The theme for this year’s conference, “Forging the Future — Lessons Learned From the Last Operational Year,” refers to the Chief of Armor’s intent to build on the events of the past year and update attendees on topics such as Armor and Cavalry roles in support of the Global War on Terrorism, Operation Iraqi Freedom, and soldier and leader training for a wide array of 21st-century warfighting contingencies.

Major General (MG) Tucker and Command Sergeant Major (CSM) DeSario have invited leaders from across the battlefield spectrum to offer presentations on current and future operations for the force, ranging from lessons learned during Operation Iraqi Freedom and the Global War on Terrorism to the extensive paradigm shifts in training and standards in the Armor Community from the Active duty, Reserve, and National Guard components.

The Armor Trainer Update will precede the Armor Conference on 16 May and focus on the Army Reserve and Army National Guard (ARNG) components of the Mounted Force. Presentations will include discussions on Reserve Component (RC) integration with Active Component counterparts, ARNG transformation, and an update on the RC’s role in meeting the Armored Force’s mission requirements.

On 17 May, the Directorate of Plans, Training, Mobilization, and Security/G3 will hold the Annual External Unit Scheduling Conference. This conference, scheduled to be held in the Abrams Auditorium, Patton Museum, allows units to schedule Fort Knox facilities for training. The Armor Center’s facilities are some of the Army’s best and this conference affords an opportunity for units to schedule them for training.

Subject matter expert briefings are scheduled for 17 and 18 May, in various locations, and are intended to present more detailed updates, overviews, and discussions on the many aspects of this year’s theme.

On the lighter side of the Armor Conference are the 9th Annual Golf Classic, social events held every evening, and the Chief of Armor’s Luncheon held the final day of the conference. These events allow troopers, civilians, and contractors of the Mounted Force to associate with fellow professionals.

Many companies will present displays of the defense industry’s newest military equipment offered to and planned for the force. These displays are always one of the most popular attractions and will be set up at Skidgel Hall from 17 through 20 May.

In continued recognition of contributions made to the Armored Force, MG Tucker will present the 10th Annual General Fredrick M. Franks Award to the individual who has made a longtime contribution to the ground-fighting and warfighting ca-

pabilities of the U.S. Army. Last year, MG Julian B. Burns received the award for his vital role in moving the Army, as well as the mounted force, into the 21st century. Award nominations are open to any Mounted Active duty or Reserve officer, noncommissioned officer, or Department of the Army civilian.

In keeping with this year’s theme, heavy consideration will be given to the nominee’s contributions toward new and better ways to train for 21st-century warfighting contingencies. Additionally, nominees should possess two or more of the following characteristics of duty performance during the year or years preceding the award:

- offered a vision for the future of the mounted warfighting force that significantly improved combat survivability, lethality, maneuverability, or mobility;
- developed an innovation in equipment, material, or doctrine that significantly enhanced the effectiveness of mounted elements of the combat arms;
- exemplified professional excellence in demeanor, correspondence, and leadership on issues relevant to mounted warfare;
- displayed a love of soldiering through skills, recognition of the sacrifice and achievements of subordinates, and attention to the intent and directions of higher commanders.

In keeping with the example demonstrated by the award’s namesake, any soldier in the Army can recommend another soldier or civilian. For more information, please visit the Fort Knox web site at www.knox.army.mil/arconf.

The Armor Conference is a great opportunity for the Armor and Cavalry Community to gather and highlight the greatest mounted combat force ever. These events never fail to attract a wide audience and this year will be no exception. We hope to welcome you all to Fort Knox.

| Event | POC | Phone* |
|-----------------------|-------------------------------------|----------------------------------|
| Armor Conference | CPT Nathan Woods SSG Bryan Smith | (502) 624-5398 (502) 624-7364 |
| Armor Trainer Update | COL Randal Milling | (502) 624-1315 |
| CSM Update | SGM Rollie Russell | (502) 624-1321 |
| Ext. Scheduling Conf. | William Rosacker | (502) 624-3555 |
| Contractor Displays | Kim Thompson | (502) 624-2708 |
| Armor Association | Connie Stiggers | (502) 942-8624 No DSN |
| VIP Billeting | Reservations Desk | (502) 624-6180 |
| On-post Housing | Carolyn Burton | (502) 943-1000 (502) 624-3491 |
| Golf Scramble | Golf Manager | (502) 624-4218 |

* DSN Prefix: 464

2004 Armor Conference and Armor Trainer Update

15 May – 20 May 2004

“Forging the Future – Lessons Learned From the Last Operational Year”

| <u>DATE</u> | <u>TIME</u> | <u>EVENT</u> | <u>HOST/SPEAKER</u> | <u>LOCATION</u> |
|----------------------------|-------------|---|------------------------|-------------------------------|
| Saturday 15 May | 0900-1600 | Vendor Displays Setup | UA/MBL | Skidgel Hall |
| | 1300-1800 | Registration for ATU/Armor Conference | G6 | Skidgel Hall |
| Sunday 16 May | 0730-1600 | Registration for ATU/Armor Conference | G6 | Skidgel Hall |
| | 0900-1500 | Vendor/Static Displays; Setup/Registration | UA/MBL | Skidgel Hall |
| | 0900-1620 | ATU/Welcome Presentations | SACG | Haszard Auditorium |
| | 1830-2130 | No-Host Social for ATU | SACG | Leader's Club |
| | 1930-2130 | *CSM Social (Break out from ATU Social) | PCSM | Leader's Club |
| Monday 17 May | 0730-1600 | Registration | G6 | Skidgel Hall |
| | 0800-UTC | External Unit Scheduling Conference | G3/DPTM | Abrams Auditorium |
| | 0800-1200 | Master Gunner Forum | Chief, MG | Richardson Hall |
| | 0830-1645 | *USAARMC CSM's Update/Workgroups | PCSM | Leader's Club |
| | 0900-1600 | ATU TASS Battalion Workshops | QAO | Skidgel Hall |
| | 0900-1615 | *Brigade and Regimental Commanders Meeting | OCOA | Futures Conf Rm, B 1002 |
| | 0900-1700 | Subject Matter Expert Briefings | Varied | Boudinot/Gaffey |
| | 1000-UTC | 9th Annual Golf Classic | DCFA | Lindsey Golf Course |
| | 1000-1600 | Vendor/Static Displays | UA/MBL | Skidgel Hall |
| | 1030-1400 | *Honorary Colonels and SGMs of the Regiment | OCOA | TBD |
| | 1600-UTC | Golf Classic Social | DCFA | Lindsey Golf Course |
| Tuesday 18 May | 0730-1600 | Registration | G6 | Skidgel Hall |
| | 0800-1200 | Master Gunner Forum | Chief, MG | Richardson Hall |
| | 0830-1500 | Subject Matter Expert Briefings | Varied | Boudinot/Gaffey |
| | 1000-UTC | 9th Annual Golf Classic | DCFA | Lindsey Golf Course |
| | 1000-1600 | Vendor/Static Displays | UA/MBL | Skidgel Hall |
| | 1630-1830 | CG's Garden Party - Inclement weather location - | CG | Quarters One Leader's Club |
| | 1900-2100 | Regimental Buffet and Assembly - Draper Print Presentation | Guest Speaker (TBD) | Leader's Club |
| Wednesday 19 May | 0730-1600 | Registration | G6 | Skidgel Hall |
| | 0800-1400 | Vendor/Static Displays | UA/MBL | Skidgel Hall |
| | 0800-0950 | Senior Leaders/VIPs Displays Review | CG/Knox LDRs | Skidgel Hall |
| | 1000-1010 | Armor Conference Intro/Video | D/CoS | Haszard Auditorium |
| | 1010-1125 | Chief of Armor Update | CG | Haszard Auditorium |
| | 1130-1225 | Keynote Presentation | TBD | Haszard Auditorium |
| | 1230-1330 | Lunch | Individual Preference | |
| | 1330-1345 | Franks Award Presentation | CG | Haszard Auditorium |
| | 1345-1445 | Keynote Presentation | TBD | Haszard Auditorium |
| | 1500-1600 | Keynote Presentation | TBD | Haszard Auditorium |
| | 1600-1610 | Patton Museum Update | Museum Foundation | Haszard Auditorium |
| | 1610-1700 | Banquet Prep Time | | |
| | 1800-1845 | Cocktails | Armor Association | Candlelight Room |
| | 1845-UTC | Armor Association Banquet | Guest Speaker | Candlelight Room |
| Thursday 20 May | 0800-0805 | Admin Announcements | D/CoS | Haszard Auditorium |
| | 0805-0900 | Keynote Presentation | TBD | Haszard Auditorium |
| | 0900-1330 | Vendor/Static Displays | UA/MBL | Skidgel Hall |
| | 0915-1015 | Keynote Presentation | TBD | Haszard Auditorium |
| | 1030-1130 | Keynote Presentation | TBD | Haszard Auditorium |
| | 1200-1320 | Chief of Armor Lunch | Guest Speaker | Leader's Club |
| | 1320-1345 | Closing Remarks | CG | Leader's Club |
| | 1415-1630 | Former Commanders Update | CG/Former CGs | HQ Conference Room |
| | 1645-1745 | Command Group Photo | CG/SGS | Brooks Field Flag Pole |

* Indicates an "invitation only" event.

An expanded schedule will be available at registration or up-to-date information is available at the Armor Conference web site: www.knox.army.mil/arconf



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