ARMOR

July-August 2007

ARMOR

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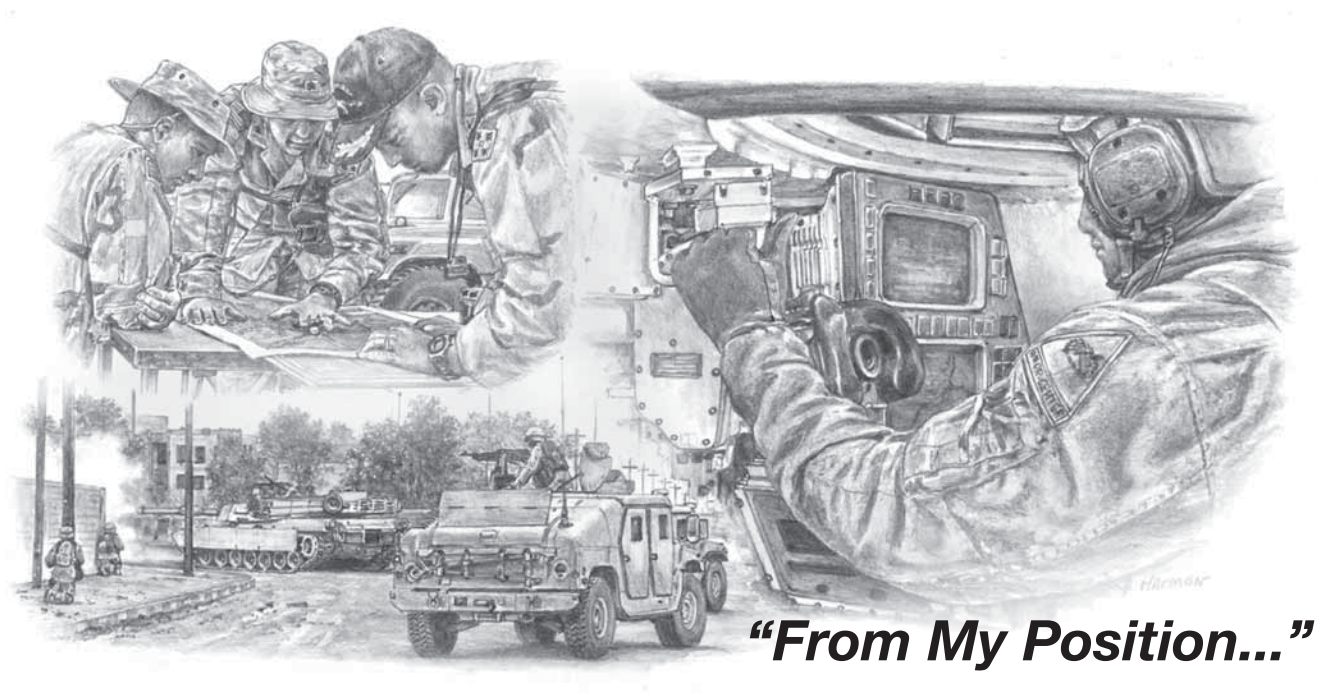

"From My Position..."

"This is just not another training pamphlet; it is a magazine and like all good magazines it will be interesting, stimulating and, I hope, at times amusing. In it you will find current military thought, tips on training, and the lessons of war illustrated by experience in battle.

"You will be the authors of the articles; you will contribute the ideas and suggestions that will make alive your training and your leadership. We have all got a lot to learn and we have all got something which, out of our own experience and study, we can teach. This magazine is to enable us to share the results of that experience and that study. I want every officer and NCO to read the [journal] and I want a lot of you to contribute to it."

Field Marshal Viscount Slim of Burma
Forward to the first edition of the *British Army Journal*,
later renamed *British Army Review*

Although *ARMOR* is a professional bulletin, according to Department of the Army Pamphlet 25-40, I could not have found a better description of our publication than the one Field Marshal Slim articulated for his own army's journal in 1949. *ARMOR* is a reflection of the force it serves. As such, it serves to educate mounted soldiers and encourage them to think more deeply about their profession. Every edition of *ARMOR* is a brief sound bite of an unbroken dialogue that began in 1888. Long before we knew anything about knowledge management or communities of practice, our mounted ancestors came together on the pages of this publication to learn from each other. We are very proud of our branch's professional journal and constantly seek ways to improve its quality and relevance to the armor force.

Frank, but professional, discussions will always find a welcome home in this publication. Although it has a provocative title, "Six Easy Ways to Lose a War at the Tactical Level," by Colonel Jeffrey Sanderson and Major Jay Miseli, is not one of those articles intentionally designed to be offensive. At times, it is an uncomfortable read, but it is uncomfortable in the same way that mid-rotation after-action reviews at our combat training centers are uncomfortable. No one likes to sit through those events, but most of us recognize their usefulness. Discussions started during the course of an after-action review often lead to markedly improved performance during subsequent missions. Their article is designed to promote the kind of discussion that will lead to improvement at the level of responsibility of most of the readers of this journal — the tactical level.

Unlike more recent editions of *ARMOR*, this issue has no controlling theme. It is a collection of articles that touch on recent armor history, lessons learned, and professional development. Leaders unfamiliar with the capabilities of the forward support company in heavy brigade combat teams for example, will find Major Trenton Conner's article, "A Commander's Guide to the Forward Support Company," to be a very useful summary of the roles, missions, and organization of this vitally important unit. Additionally, Major Niel Smith provides some valuable insights into the planning and execution of a successful counterinsurgency operation in Sa'ad in his article "Retaking Sa'ad: Successful Counterinsurgency in Tal Afar." In it, he not only recounts the major events of the operation, but also discusses the thought processes behind the selection of Sa'ad as the target of the effort. For this reason, it may be especially useful to leaders facing similar situations in their areas of operation.

If it has been a while since you last read *ARMOR's* "Letters to the Editor" section, make sure you take a look at this month's version. Dr. Robert Cameron's article, "Scouts Out — But Not in HMMWVs!," which appeared in the March-April issue, has sparked the kind of passionate response that has been the hallmark of our journal for many years. Recently, we were somewhat concerned that either the force was too busy to respond to our articles or the articles themselves were not sufficiently thought provoking to motivate our readers to write. The responses to Dr. Cameron's article have at least temporarily put those concerns to rest. We constantly seek to find articles that promote thoughtful and professional discussion on any subject that affects the armor force. If you have an opinion on a particular issue, take time to organize your thoughts, conduct some supporting research if necessary, and write them down. In the end, we will all benefit from your efforts.

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LETTERS

Scouts Out — But Not in HMMWVs!

Dear *ARMOR*,

Kudos to Dr. Cameron for his detailed study on how we really "got it wrong" in the armor and cavalry force! Those of us serving in the field at the time of this wrong-headed decision were amazed that the senior leadership of our force could come to the conclusion that sending scouts out in a HMMWV was a rational idea. Obviously, decisionmakers were not thinking clearly about the demands of armored reconnaissance when operating forward of a heavy or light task force — it requires the ability to survive and actually fight, at times, to complete the mission.

Then on top of irrational leadership, we make the same blunder in fielding the suicidal brigade recon troop. Where is the common sense? Perhaps it died during the infamous Armor Conference when the "Broken Saber" speech was delivered by a man who understood armored reconnaissance. Somewhere along the line, we became lost and overly enamored with the concept of stealth. Scouts are not long-range surveillance detachments (LRSDs).

If we are going to send our best and brightest forward to find and report on the enemy, we should send them in combat systems capable of fighting for the intelligence that we so desperately need. Send them in cavalry fighting vehicles and tanks! Give brigade combat team commanders an armored cavalry troop that is combined arms and not a "Broken Saber!" Oh, and leave the concept development to common-sense oriented combat veterans, not operations research systems analysts (ORSAs)! Data points are interesting, but won't stop hot lead!

OWEN T. EDWARDS
LTC, U.S. Army, Retired

The HMMWV is an Effective Option in COIN Operations

Dear *ARMOR*,

I am writing in reference to Captain Gavin Schwan's article, "An Ad Hoc Motorized Platoon in Tal Afar," in the May-June 2007 issue of *ARMOR*. I felt compelled to comment due to all the debate currently involving the HMMWV, and its role in Iraq, especially in recent articles and positions proposed in *ARMOR*.

While many of the authors make valid points in reference to the vulnerabilities of the HMMWV, few, if any, make reference to the benefits of the HMMWV in a counterinsurgency (COIN) environment. In his article, CPT Schwan, by subtle intention or innocently, contributes to this debate by describing what I believe is the HMMWV's greatest strength, "The key strength of the HMMWV in this environment [Iraq] is executing soft attacks via engagements with the people." The HMMWV, while not a perfect platform for a combat vehicle in direct action, is not a dead vehicle in a COIN environment. As CPT Schwan points out, it provides the mobility and flexibility to reach people in built-up and remote areas, often inaccessible to other platforms in the U.S. Army's inventory. In a COIN fight, the fight is for the populace. We cannot win this fight if we are not engaging the local populace, and the HMMWV allows us to do this with relative ease due to its low intimidation factor.

I agree, the HMMWV does not have the protection larger platforms offer, but it offers a degree of flexibility in direct engagements with the center of gravity in Iraq — its local citizens. As long as we continue to "button-up," and remain secluded from the local populace, we will need more and more armored vehicles. I will accept that the decision to use a HMMWV, given the current enemy situation, is a tactical decision based on such considerations and may not always be the best platform. However, the logic that the HMMWV is a "dead" platform due to survivability considerations alone is logic not considering all the facts of a COIN fight.

It is worth remembering and noting the key points CPT Schwan discusses on the strengths of a motorized platoon, and that it was a weighted decision on how to employ these platoons in respect to risk. The HMMWV is a limited platform in our current operating environment and provides limited protection and firepower; however, it provides the most in terms of engaging the populace and tearing down the walls of isolation between the Iraqi people and our soldiers. The decision to use HMMWVs is one that must be weighed heavily in terms of force protection and mission intent.

MARK S. LESLIE
MAJ, U.S. Army

Scouts Out!!!! *Six* Decades of Studying the Wrong Problem

Dear *ARMOR*,

I would like to thank you for printing LTC Chester A. Kojro's astute letter (May-June 2007) relating to scout doctrine in the present force. However, I would like to point out that LTC Kojro neither traced this problem back far enough in the past nor projected it far enough into the present (and, presumably, future). In reality, the Army has been asking the wrong questions and offering the wrong answers to these questions for the better part of the mechanized era.

Thus, it is important to recall that in the 1920s and 1930s, the cavalry was not permitted to have "tanks," since they were considered an infantry support weapon. This led to creating the "combat car," a vehicle that was, except for its name, a tank; however, it also implied the mounting of lighter armament to obtain stealth and speed. This absurdity ended with the beginning of World War II and the deployment of a mixed bag of vehicles for the mechanized cavalry, a force that was supposed to serve in the traditional cavalry role (scouting, flank protection, economy-of-force missions, and rearguard operations). Unfortunately, the vehicles — a combination of unarmored Jeeps, M3A1 scout cars, M8 armored cars, M3/M5 light tanks, and M8 assault guns — did not mesh well as their capabilities were widely divergent. American success in reconnaissance during operations against the Germans owes at least as much to the bravery of the cavalry troopers as to the adequacy of doctrine and equipment.

This problem continued to plague the Army during the early and middle period of the Cold War. Reverting to prewar concepts, the Army developed a series of underarmed, underpowered, and underprotected command and reconnaissance carriers such as the M114. All of these vehicles shared the commonality of using a single heavy machine gun as armament, even though it was a step backward from the trend in 1944-1945! To be sure, tests were made to provide adequate armament — to allow recon by fire with a decent chance of survival — but none was ever mounted. As a result, the Army retired the vehicles after only brief use (and no combat use that I am aware of), issuing M113s to cavalry units that actually were engaged in combat operations such as in Vietnam.

Simultaneously, the Army was unable to field a proper light tank, being forced to rely on the M41 for way too long. This was, of course, not for want of trying. A number of potentially useful light tanks were designed, only to be rejected on various grounds. The apex of this light tank crisis came in 1962 when the Tank-Automotive and Armaments Command (TACOM) cancelled the T92 project because it was not amphibious! I have dealt with the T92 extensively in a previous article (published in *AFV News*, volume 42, #1, pp. 10-13), and will only summarize. The T92 was a small, light, highly mobile gun platform designed around the recon-by-fire mission. The crew of four sat together at the vehicle's rear, with the engine mounted in the front (as on the Israeli Merkava), and the armament mounted externally in a cleft turret. This resulted in a vehicle that was only 80 inches tall overall and weighed 18.6 tons. Mobility was in the range of 35 miles per hour, but could easily have been improved by mounting a slightly more powerful engine. Likewise, armament was a potential problem, as the T92 mounted the same 76mm gun as the M41. It should be noted, however, that a number of 90mm low-velocity weapons were being tested at the same time as the T92 and the design included sufficient room for the increased size of such a weapon. After cancellation, the Army replaced the T92 with the M551, a vehicle plagued with many problems — mainly due to the untested nature of the technology mounted in the vehicle.

Still, advocates continued to call on the Army to field a vehicle that would support the cavalry's need. This ended in the late 1960s and early 1970s with tests of the tracked and wheeled scouts (XM-801). Both vehicles mounted a 20-mm gun, which was considered adequate for the role of recon by fire. After much debate, TACOM selected the tracked XM-801 scout, only to have Department of Defense pull the rug out from under the project entirely when the scout was folded into the XM-723 mechanized infantry combat vehicle (MICV) project, which finally emerged in the 1980s as the M2/M3 Bradley infantry/cavalry fighting vehicle.

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Your Next Tank?

by Major General Robert M. Williams, Commanding General, U.S. Army Armor Center

What will your next tank look like? I think it is time to start the debate. Now do not get me wrong, the Army's number one priority is the Future Combat System (FCS), and that is the right answer. The mounted combat system (MCS) will be the tank in the future brigade combat team (FBCT) formation. Its contribution to the FBCT will be enormous, and its individual capabilities will be impressive. That being said, the Abrams tank has done, and continues to do, the job we need it to do. It has proven itself to be the best tank ever deployed to combat, but the debate about the M1's future needs to begin now. We are all very aware that this enormously successful vehicle is over 25 years old, and if it is to remain relevant in the future we must modernize it, as well as the other systems in the heavy brigade combat team (HBCT).

The fact is, the tank is a microcosm of our branch; its mission is to close with and destroy the enemy through fire, maneuver, and shock effect, and right now it does that with relative impunity. Over the next 40 years, we must continue to upgrade this "King of the Killing Zone" to ensure overmatch against our enemies, guarantee crew survivability, and guarantee that we can operate in a joint and combined environment in conjunction with the FCS. Currently, the FCS program will not be a replacement for the HBCT. The two organizations will fight separately and together to destroy our enemies wherever they decide to take us on. For our part, we must ensure our HBCT formations stay current as we approach what some people are calling the "next technological revolution."

So how must our tank change to meet these future needs? First, let me start by saying it is not about what it is called. We could make so many modifications that it gets a new nomenclature, or by 2050, we could be riding in the M1A6. That part is not important. What is important is the capability the vehicle brings to the future battlefield. It must stay mobile, lethal, and survivable, and perhaps most importantly, it must be interoperable with other systems on the battlefield. Let's look at each of those characteristics briefly.

Mobility has been the cornerstone of our heavy force ever since Major Ernest Swinton had the bright idea to use tracked, armored vehicles to cross the "no man's land" of the World War I battlefield. Unfortunately, threat weapons systems have driven us to a vehicle that weighs over 70 tons! With that much weight, it is extremely challenging to deploy over strategic distances and it is an enormous undertaking to bring the sustainment forward to allow it to operate in a remote environment. We must reduce the weight of the vehicle, and the technologies of the FCS may allow us to do this. How much mobility could we gain with a re-engineered Abrams? How much weight could we harvest from the tank by incorporating an autoloader, shrinking the data bus, shortening and lightening the gun tube, replacing certain parts with titanium and adding an active protection system (APS) or updated armor packages? These are some of the questions that we should ask ourselves, and there are probably others as well. One thing we do know is that the technology to do all this is going to be a reality, if it is not already.

Lethality has been defined as "the quality of being deadly." The challenge today is to *stay* deadly. While we currently have the ammunition to kill just about anything we see, what about killing that which we cannot see? When can we move into the realm of beyond line of sight (BLOS) engagements? Again, this is a place where we can borrow technology from the FCS program. It is no secret that the FCS mounted combat system will have a 120mm cannon similar to the M1. This cannon is being engineered to shoot a mid-range munition (MRM) that has already been tested on an Abrams tank and is capable of hitting a moving target beyond 8 kilometers. We must incorporate this capability into our heavy fleet, if the HBCT is going to effectively fight alongside the FBCT. As we look long term, there are some amazing initiatives ongoing with electro-magnetic (EM) technology, and there is a possibility that by 2050 this technology will be small enough to mount inside our tanks. That technology could lead us to innovations that will contribute to a lighter tank, more lethal tank, and, perhaps most importantly, a more survivable tank.

Survivability has been the critical design parameter when engineering our current fleet of vehicles. We pay careful attention to this issue to ensure our Soldiers are in systems that will protect them. The best way to be protected from the enemy is to not be observed, targeted, and hit by the enemy. In the future, there will be technology breakthroughs in active camouflage, smart materials, and active protection systems. In addition, by pursuing EM technology, we could potentially reduce or even eliminate the onboard warheads and propellants inside our turrets that present such a devastating threat to our crews. The technology is coming.

Last, but not least, we must incorporate the network into the HBCT formation. This is the key capability of our future force and it is what allows that force to truly be a "system of systems." The network provides security through situational awareness and lethality through a shared view of the battlefield. It will allow us to maximize the strengths of our combined systems and minimize their weaknesses. The network will be the key component that allows the HBCT formation of the future to operate seamlessly alongside the FBCT.

Now up until this point, I have just been dreaming on paper. While many of the changes I propose are possible now and in the future, we still have much work to do, and the time is right to begin working toward some of these options. The HBCT was designed from the ground up as a task organized, self-contained unit. Much like our premier modernization effort, the FCS, the HBCT must become a "system of systems" to stay on the leading edge of the battlefield. For our part at the Armor Center, we are working hard to secure funding for research and development of some of the aforementioned technologies. Our future depends on ensuring that FBCTs, HBCTs, SBCTs, and IBCTs can work together to destroy our enemies. What will your tank look like in that fight? I do not know for sure, but I do know that it is time to start the debate — I look forward to your input.

Forge the Thunderbolt!

CSM Otis Smith
Command Sergeant Major
U.S. Army Armor Center

Heat Injuries are Preventable

As summer temperatures rise, so does the risk of heat injuries. With high heat and high humidity, this summer is already off and running. Summer heat, especially early in the season, may be harmful to soldiers unless leaders are aware of how to identify, treat, and prevent heat injuries.

The human body gains heat continuously through various channels. This gain is even more significant in a soldier exerting himself physically in a hot and humid environment. There are many processes through which body heat is lost. A soldier can regulate his body temperature and stay safe. However, factors, such as hydration and rest, play a very important role. Poor physical fitness, obesity, illness, and a lack of instinct to drink water adequately are major risk factors for heat injuries as well. These factors are commonly found in newly recruited soldiers.

The Three Types of Heat Injuries

The three types of heat injuries include:

Heat cramps, which are the result of excessive salt and water losses due to profuse sweating in soldiers whose bodies are attempting to rapidly lose heat. It presents as intermittent muscle cramps, which usually occur in the legs (calves and thighs).

Heat exhaustion is a more severe form of heat injury. It implies a significant loss of water from the body. The signs and symptoms include weakness, exhaustion, headaches, dizziness, and profuse sweating with an elevated body temperature.

Heat stroke is the most serious form of heat injury. It manifests with a body core temperature of 106 degrees Fahrenheit and above. Soldiers may become confused, aggressive, or even comatose.

"Soldier at Risk" Profile

Certain factors place soldiers at risk for heat injury. Leaders are advised to "profile" soldiers who may be at risk, as well as monitor conditions that may increase a soldier's risk. Leaders should be watchful of:

- Soldiers who fail to report they are not feeling well.
- Training soldiers if they have a fever or are suffering from other illnesses such as diarrhea or flu.
- Soldiers who do not drink enough water.
- The well-motivated soldier who will not "fall-out" easily.
- Soldiers performing strenuous exercises on a hot and humid day.
- Soldiers in a poor state of health.
- Soldiers who are overweight.
- Previous victims of a heat injury.
- Soldiers who have not had sufficient rest before, during, and after activities.
- Soldiers who wear thick clothing or additional layers of clothing in hot weather.

Heat injuries are preventable. When a heat injury occurs, it is an indication of failure in one or more components of the prevention system. This makes prevention at the leader's level even more important. A good understanding of how to identify and prevent heat injuries amongst leaders goes a long way toward reducing the incidences of heat injuries. The following are important factors in identifying and preventing heat injuries:

Dehydration. Dehydration refers to the reduction of body water content to that below the normal physiological (and safe) level. Some degree of dehydration is inevitable when working in a hot and humid environment. This is due to water loss through sweating.

New soldiers are more prone to dehydration as they generally tend not to have a "drinking habit." They tend to drink water only when extremely thirsty and this is too late. Having not trained regularly in hot and humid conditions, they do not have an "instinct" to drink water beyond the point of thirst. They must be trained to do so. Soldiers who are well trained, fit, and fully hydrated tolerate heat exposure more effectively than less-fit and dehydrated soldiers.

Leaders must understand the physical indicators of dehydration, which will help in identifying and confirming the level of dehydration in soldiers. Physical indicators of dehydration include:

- Skin is less elastic; on pinch test, the skin regains its shape slowly.
- Higher sweat rate; if sweat production suddenly stops despite continued heat exposure, dehydration has reached a severe level.
- Reduced physical endurance.
- Accelerated onset of fatigue.
- Faster heart rate.
- Unusual tiredness and an increased rapid heart rate after minimal physical exertion.
- Suppressed appetite; food intake is reduced during water deprivation and water intake reduced during starvation.
- Less alert, increased lethargy, difficulty concentrating, confusion, and irrational behavior.

Hydration. Soldiers tend not to sense that they are dehydrated and must therefore be consciously reminded to replace the water that is lost through sweating. "Voluntary" dehydration can be minimized by providing cool water and sufficient time for drinking. Leaders should ensure soldiers have a regular consumption of fluids. Leaders can help prevent heat injury by enforcing these six simple steps:

- Soldiers should drink water until they are no longer thirsty and then drink a little more.

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From the Boresight Line:

Maverick 7 Signing Off the Net

by First Sergeant Robert Hay

"It is not the strongest of the species that survives, nor the most intelligent, but the one most responsive to change."

— Charles Darwin

I will unstrap my tanker boots for the last time in July and hand over the responsibilities of chief, Master Gunner Branch. As I look back over my 26-month tenure, I leave without regret and am satisfied that my term was a success. It has been both an honor and a pleasure to serve in this position. As I prepare for retirement, I would like to share a few thoughts with my fellow tankers on the changes we have made to the Master Gunner Course and the plans for its future.

The course has undergone several changes to remain relevant and better serve the armor force. Most significantly is the reduction of the course from 11 weeks to 9 weeks. This was a tough one to crack. We had to reduce the training by 2 weeks, yet ensure that we did not compromise the quality of training or the integrity of the course. We had to make certain the force received highly trained master gunners who had all the skills and knowledge needed to be successful while enhancing their unit's gunnery proficiency and combat lethality.

As of the time of this writing, we have conducted three successful pilot programs using the 9-week program of instruction (POI) with great success. We did not experience any abnormal failure rates and the master gunners graduated with the same skill set required by the 11-week program. This success is attributed to the course's extraordinary master gunner instructors. They have worked many long hours developing and rewriting lesson plans and were 100 percent dedicated to the success of the pilot programs.

The difficult task of remodeling the course to meet the 9-week constraint required us to take a hard look at each task, make changes to streamline each block of instruction, and ensure we were being as efficient as possible. We managed to reduce the course without removing any of the tasks being taught by developing a stand-alone M1A2 Master Gunner Course. Beginning in fiscal year (FY) 2008, we will schedule both A8 and K8 producing classes. This move was necessary to accommodate the increasing number of units that are now equipped with M1A2 tanks. An M1A2 unit can now send a soldier to school, have a master gunner trained on specific vehicle variants, and will not have to be scheduled for a transition course. Once again, this enables us to quickly and fully train master gunners.

In 2008, the Master Gunner Course will become mobile. In August of 2007, we were directed to look at the possibility of taking the course on the road. The mobile training team (MTT) is steadily coming together. By the end of this year, we will have a first-class mobile set up, which includes two 53-foot trailers, with enclosed awnings, that will support six tanks. During training, one of the trailers will be used as a classroom and the other will display and house the training aids needed to support the Master Gunner Course. Other than a few minor miscellaneous requirements, the only thing the host unit will provide is a place to setup and plug in the trailers. This setup will allow us to be virtually self-sufficient, thereby reducing the burden on the unit. The MTT also served as a basis for creating the two separate M1 courses mentioned above.

Last, but certainly not least, I would like to remind everyone that the armor force is in a perilous state. For the past four years, our focus has been urban operations, which has been one of the contributing factors to the degradation of tank and gunnery skills. Master gunners have the responsibility to carry the torch; they have proven to be invaluable assets to the armor force and must lead the way into the future. Tank and gunnery skills can be preserved at the unit level by continually assessing crew proficiency, identifying crew procedural errors, and providing training for crews to operate the tank to its designed capabilities. Master gunners have the skills necessary to sustain and improve the unit's tank gunnery proficiency. Master gunners hold the key to preserving the armor force's tank and gunnery skills, thus shaping the force for its future role.

As mentioned before, the past two years have brought about many successful changes to the Master Gunner Course, much of which is owed to the outstanding instructors, soldiers, and civilians assigned to the master gunner branch; without their assistance and dedication, we could not have successfully completed our undertakings.

So with that, to the instructors and staff, thank you! Your selfless service and dedication to training have been vital to what we do, and without your efforts, we could not have accomplished so much with so little. "I am a Master Gunner."

Six Easy Ways to Lose a War at the Tactical Level

by Colonel Jeffrey Sanderson and Major Jay Miseli

"It takes a long time to train a good hunting dog, but a few minutes handled by an idiot will make the dog gun shy."

— Appalachian Proverb

The American public has given its Army a "bye" on this war — so far. The public has not turned against our Army as it did a generation ago. The Army's mission is to fight and win the Nation's wars, regardless of circumstances. Counterinsurgency (COIN) may not be the fight we want, but it is the fight we have. Thus far, we have not lost the war, but we have not won either; in many eyes, that equates to losing.

It is always easier to fix blame than fix a problem; it is easy to blame politicians and strategists because strategy wins wars. Strategy has its primacy, but at the tactical level, we play a pivotal role in victory or defeat.

Has the Army conducted a thorough "mid-rotation like" after-action review at the tactical level? Many will immediately point out all the great work the Center for Army Lessons Learned (CALL) and countless other organizations are doing to collect, analyze, and disseminate data points from the front. No doubt, there are many great soldiers and civilians who are working overtime to "spread the word" on various data points.

After-action reviews (AAR) are not just data points, however; they are designed to positively influence the collective missions and organizational effectiveness within the unit. More often than not, they are successful. At the conclusion of a good AAR, we immediately begin focusing organizational energy on the items listed in the "improve" category.

Below is an attempt to begin the AAR process; there are many "sustains," but this article focuses on six major "improves." Therefore, these six easy ways to lose a war at the tactical level are historically significant; however, they remain relevant in the contemporary operating environment (COE):

Failure to Maintain Contact

As young leaders, we were taught that once the enemy makes contact, we maintain that contact until decision. Today (after receiving small-arms fire or an improvised explosive device strike), do we universally maintain contact or do we quickly exit the engagement area and continue movement? Our enemy enjoys being illusive, taking their best shots, and then blending into the population. It is a difficult tactical proposition, but we cannot afford to break contact with the enemy. In a COIN COE, the enemy often chooses the time, place, and circumstances to initiate contact. He primarily uses visual, direct, indirect, and obstacles as preferred forms of contact. In terms of force ratios, unless we are traveling with a very small party, we have the ability to (as a minimum) maintain contact until relief arrives. If we fail to maintain contact, we embolden and encourage the enemy, creating a vicious cycle of allowing the enemy to have the initiative.

Historically, this is the most difficult tactical principle to follow. The enemy is smart, has studied us extensively, and knows our tactics for both entering and exiting an engagement area. Although it is often stated that there are no wrong tactics, moving miles out of the area or attempting to ignore an improvised explosive device (IED) strike in hopes the enemy will not do it again falls squarely into the wrong-tactics category.

Gaining and maintaining contact with the enemy involves maneuver skills (achieving positional advantage) vice movement (point A to point B) skills. Leaders who can transition from movement to maneuver quickly and efficiently win battles in both conventional and COIN environments. Although battle drills play a large part in this process, maneuver is much more than simply executing a series of battle drills. Gaining positional advantage over an enemy in a city of six-million people is a difficult (but certainly not impossible) task, requiring judgment and multiple training repetitions in a setting that is as realistic as possible.

If we are going to execute in an urban environment, we must train in an urban environment. Sending soldiers to train or maneuver on pristine ranges and open areas in designated "training areas" does not train them for the task of maneuvering in large urban areas. Arguably, the toughest task a unit encounters in combat is making a mounted 90-degree turn (in traffic and under fire) in an urban environment. Traditionally, there is a clean line between the "training area" and the "cantonment area." Until we can build large urban training centers, we must consider training in cantonment areas. We do an excellent job of touting the slogan "train like you fight," but are we living it?

"To surrender contact is to surrender the tactical initiative, which, contrary to popular debate, does not contravene current COIN theory. This does not imply a "weapons free" situation, but rather an immediate, deliberate, and measured response, regardless of the type of contact, specifically for IED incidents."

To surrender contact is to surrender the tactical initiative, which, contrary to popular debate, does not contravene current COIN theory. This does not imply a "weapons free" situation, but rather an immediate, deliberate, and measured response, regardless of the type of contact, specifically for IED incidents. Deliberate does not imply slow. The local population will understand our measured response and, at a minimum, know we *will* respond. There is (and always will be) the risk of being drawn into a near ambush; tacticians take risk because risk involves rewards. Although many great units are executing this tactic, it does not appear universal in application.

Become Risk Averse

Everyone grieves the loss of a soldier, but if that grief negatively influences our tactical decision cycle, then we become ineffective tactical leaders. The natural order of combat is: mission, soldiers, and self. Risk-averse leaders lead to avoid risk, which in a COIN COE, plays directly into the enemy's game plan.

Not becoming risk averse during a year-long leader Army training and evaluation program (ARTEP) is extremely tough. This article barely touches on the difficulty of such a task. Leaders bond with soldiers, and the more tactical drama they share, the closer they become. This is nothing new, and history is replete with examples of both risk-averse and blood-thirsty leaders.

All too often, however, success is defined by "bringing all my soldiers home." While this is laudable and speaks well of leaders, it does not answer the fundamental question of whether or not we accomplished the mission. Gifted tactical leaders work hard to accomplish both. We all want our casualties treated when the enemy initiates contact, but if the casualties become our singular focus, then we have (once again) played into the hands of the enemy. Our warrior ethos is non-negotiable, regardless of the circumstances at hand.

Failure to Patrol

We were taught young to see the terrain, the enemy, and ourselves. The terrain is neutral, and although it may be an urban jungle of six-million people, it remains as relevant today as it did at Gettysburg in July 1863. The key terrain at Gettysburg was not determined through a map reconnaissance but by mounted patrols. Arguably, the battle is decided by the side with the most battlefield knowledge, and that knowledge is determined by patrols.

When General Ridgway took command of the beaten 8th U.S. Army in Korea, he immediately ordered a major increase in patrols, not just to increase battlefield knowledge, but to increase his soldiers' sense of purpose. Ridgway's aggressive technique turned the 8th Army into a highly effective fighting force and should serve as a lesson for the ages.

If we fail to patrol, the enemy will emplace IEDs along our prospective lines of operation (if the enemy does intelligence preparation of the battlefield), and when we use those lines again, we will have contact. Contact will come at a time and place of the enemy's choosing and will meet his tactical purpose. We have claimed for years to "own the night." Do we actually; does the enemy? Purposeful tactical movement through and around the battlespace has positive second- and third-order effects, especially at night.

Every patrol must have a definitive tactical task and associated purpose. Presence patrolling to "show our presence" is a leader's sin. It is analogous to the order "move out and draw fire … and when they start shooting at you…" Orders of this nature do not instill confidence in one's chain of command. Acceptable tactical tasks include clear, control, disrupt, and defeat. Although it would be easy to simply take Nike's approach and "just do it," leaders must ensure we have clear tactical tasks and nested purposes during all patrols. One thing is certain, failure to patrol our battlespace leads to an emboldened enemy.

Logistics Bloat

Logistics are critical and central to all combat operations, but you have to know when you have enough. There is a point where logistics occurs in direct support of nothing but logistics. Viet-

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nam is a classic example. At one point, the base at Long Binh, Vietnam, occupied more than 25 square miles, had almost all known amenities, and employed 20,000 Vietnamese. General Bruce Palmer commented on several occasions about the amount of combat power required to support and defend these large logistics-bloated areas, claiming this was even more troublesome than one-year tours to our efforts in Vietnam. According to some estimates, in 1968, only 15 percent of the total force was available at any one time for sustained combat operations.

Tooth-to-tail is a historical albatross, but nonetheless must be wrestled with and conquered. The raging debate is one of how well we treat our soldiers. We all want our soldiers to have the very best, but at what cost? Many great soldiers believe that reenlistments are directly proportional to soldier comforts; others will tell us "it has a dramatic negative impact on the mission." Meanwhile, the debate continues.

Comfort aside, our Army, in its long and distinguished history, has not won a war fighting from garrison. The more organizational energy we place into making our forward operating bases a garrison (supporting and defending that garrison) is organizational energy we are not devoting directly to our primary mission. The "super FOBs" hold many great and disciplined soldiers, but the enemy also knows the value (in terms of panic) of a well-placed mortar round.

Current COIN theory encourages us to live among or as close to the population as possible. Building and maintaining super FOBs (with requisite security requirements) is an extremely expensive proposition in terms of soldiers. The "if we build it, they will come" mentality is good for contractors and logisticians who enjoy centralized planning, execution, and total and complete control over their inventories, but it may not be the best long-term solution. The security brought by being surrounded by friends only makes us "feel" secure; it does not accomplish the mission.

Failure to Train and Educate the Rules of Engagement

The myths, war stories, and tall tales associated with the rules of engagement (ROE) are legendary and are increasing faster than gasoline prices. Soldiers use ROE to justify shooting, not shooting, thinking about shooting, and a myriad of other circumstances.

Training is reflexive in nature and provides specific responses to given stimuli. Education questions why we execute the drill to compensate for stimuli; however, both are required with respect to ROE. Soldiers in our current formations are the brightest and best educated our Army has ever known. They soak up knowledge and ask for more, which is why education is the most critical training we execute in preparation for deployment. Our soldiers will certainly be trained to execute the training effect we desire, but in the enemy-induced ambiguous world of COIN, the enemy wants to create as much confusion as possible and will readily use our ROE.

Training the ROE in a complex environment is not enough; we must also plan and prepare soldiers by training them on the second- and third-order effects of the decision to shoot or not shoot. Going kinetic in combat is a life's worth of training and experience applied by a decision that will be made in milliseconds. We cannot afford to be undereducated in this protracted and ambiguous war.

Leaders must also thoroughly study, intuitively understand, and educate to the same level of variations in response, which are based on the enemy's forms of contact with us and our forms of contact with him. For example, if the enemy initiates contact with an IED, we cannot respond with unguided direct fires in all directions as we attempt to break contact, even if the ROE allow it. As frustrating as it may be, a measured response commensurate to both forms of contact is the correct tactical step on the path to victory.

"Training the ROE in a complex environment is not enough; we must also plan and prepare soldiers by training them on the second- and third-order effects of the decision to shoot or not shoot. Going kinetic in combat is a life's worth of training and experience applied by a decision that will be made in milliseconds. We cannot afford to be undereducated in this protracted and ambiguous war."

Centralization

Centralization, whether physical in terms of collocation of units with shared or widely distributed battlespace or conceptual in terms of echeloned command and control and information requirements for day-to-day operations, is at best counterproductive, and more likely disruptive, to successfully executing tactical operations. Centralization occurs to some extent because leaders are attempting to take care of their soldiers by providing them with a safe and comfortable FOB.

From the physical perspective, centralization drives units toward super FOBs, which provide a very high level of soldier comfort, as well as the ability to distribute security requirements across a larger pool of available soldiers. It is also arguably a much simpler process to supply the consolidated tactical units garrisoned at these bases. What is lost, however, is the significant ability to tactically prosecute the war.

The location of a large FOB results in isolation from the local population that we are meant to secure and influence, and conducting patrol operations becomes difficult because of distances involved. Any operation outside the base requires a distinct movement phase (during which we are very vulnerable to whatever form of contact the enemy chooses to bring to bear) before executing specific tactical tasks. We give the enemy ample opportunity to observe our movement, target our movement, or prepare for the subsequent operation. In short, we compromise the ability to effectively and continuously patrol within a zone because we do not live in that zone. We also increase the actual logistics burden because we make targeting our supply trains exceptionally easy. Logistics packages are not headed to new locations on differing routes; instead, they are generally limited to the handful of trafficable routes in and out of the FOB, which the enemy can readily target at leisure.

At the conceptual level, centralization is perhaps more dangerous. Trust of subordinates is lost not by intent, but physical proximity. Leaders may intend to trust subordinates, but they may not actually trust them in practice. Leaders have the authority to check any operation at any given time. A task force commander can readily accompany a company team when he chooses because his task force is generally not conducting task force-level operations. He is not required to truly trust that company commander because the circumstances do not demand actual trust. If a leader is uncertain about the accuracy of a report, he can simply go to that company's command post and check. Leaders are on hand to receive information, and due to the management adage of old, can immediately and directly act on information they receive. The requirement to trust subordinates to do the right thing does not physically exist within consolidated units that are garrisoned out of a FOB, especially given garrison-like information requirements.

Our Army and our Nation cannot afford even a stalemate in Iraq. At the tactical level, leaders can directly influence the outcome of this war by playing to win, versus merely playing not to lose. Playing to win is a challenging proposition, though. It requires leaders at all levels to take risks, and within those risks, we will likely lose lives. Soldiers, however, will be working toward a deliberate decisive endstate for particular operations.

Playing to win also requires taking risks with combat service support operations by placing a distribution burden on logisticians as they supply smaller bases throughout the unit's battlespace. Soldier comfort will suffer in the short term, but we will be working toward a clear conflict resolution. Leaders and soldiers in all units will need to execute frequent, decentralized operations, and will need to be exceptionally disciplined, educated, and trusted in the execution of those operations to avoid tactical blunders that create strategic losses.

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A Commander's Guide to the Forward Support Company

by Major Trenton J. Conner

The Army is making great transformation progress as it moves to a brigade-centric organization, which includes creating forward support companies (FSC) that provide logistics support to battalions and operate as subordinate units of that battalion. Integrating these new companies has created a few challenges, many of which stem from creating new doctrine and deviating from the accepted norms of Army of excellence (AOE) doctrine. Battalion commanders and executive officers struggle with the differences between the AOE doctrine they learned early in their careers and the emerging doctrine of the transformational Army. Many commanders across the Army do not use the FSC to its full potential because they do not fully understand its capabilities and subject-matter expertise. Most of these commanders have not yet been trained by the institutional Army on its new logistics doctrine.

For many years, brigade-level logisticians created forward logistics elements (FLE) "out of hide" to augment existing capabilities, such as the support platoon or battalion maintenance section, to weight the battlefield logistically as needed with assets and command and control (C2). This ensured that critical supply and maintenance capabilities were forward with supported battalions. The FSC was created to provide all assets a battalion needed to be self-sufficient and the necessary command, control, communications, computers, and intelligence (C4I) to plan, synchronize, and control logistics operations. The FSC is a multifunctional unit that includes a distribution platoon and a maintenance platoon organized to support a maneuver battalion.[1]

This article provides information on the doctrinal composition, capabilities, and operations of the FSC, as well as doctrinal and non-doctrinal tactics, techniques, and procedures (TTP) to both current and future combined arms battalion (CAB) commanders and staff officers. It also focuses on the CAB FSC and not the unique requirements of FSCs supporting reconnaissance squadrons and fires battalions; however, the fundamental principles are the same for all FSCs. Also, for the sake of discussion, the heavy brigade combat team (HBCT), CAB, FSC's modified table of organization and equipment (MTOE) will be used throughout the article.

The Forward Support Company

The FSC is a 233-soldier, multifunctional unit that includes a distribution platoon and a maintenance platoon organized to provide support to a maneuver battalion (see Figure 1).[2] This is intentionally a very broad mission statement. The FSC provides each battalion a robust and flexible logistics capability to support both doctrinal and non-doctrinal missions in support of full-spectrum operations. Although the FSC is organic to the brigade support battalion (BSB) due to Title IX considerations, it operates under the command and control (C2) of the CAB commander through attachment or operational control.

Several sections provide the doctrinal missions and capabilities of the subordinate elements of the FSC. These elements include the company headquarters section, the food service section, the distribution platoon, and the maintenance platoon. Each section's critical equipment,

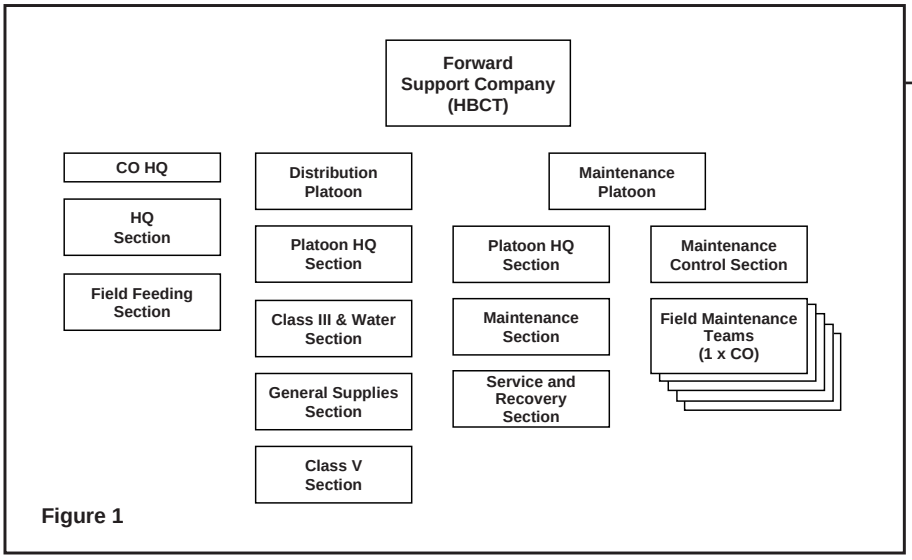

Figure 1

military occupational specialties (MOS), and potential shortfalls are discussed below.

The company headquarters. The FSC headquarters is similar to every other company headquarters in the Army. The headquarters section is responsible for the C2, supply, and administration of the company. The headquarters section also performs logistics tasks that were previously performed by the battalion S4. However, the battalion now has trained and dedicated logisticians to coordinate and provide continuous support, which includes:

- Coordinating and providing technical support to the CAB.
- Advising the CAB commander on sustainment requirements versus available assets.
- Determining sustainment requirements in coordination with the BSB operations section, CAB S4, and logistics representatives from attached units.
- Providing input to the CAB logistics estimate and service support paragraph of the operation order (OPORD).
- Planning and monitoring support operations and making necessary adjustments to ensure support requirements are met.
- Planning and coordinating allocation of available combat service support (CSS) resources.
- Tracking available assets through subordinate company teams, BSB support operations section, CAB S4, and other units.
- Requesting backup support when needed.
- Recommending support priorities and enforcing priorities received from higher headquarters.
- Coordinating with the S3, S4, and headquarters company commander on CAB support area locations.
- Planning and executing contingency operations as required.
- Coordinating with the S3 and S4 on primary and alternate routes into the CAB support area.
- Establishing and monitoring brigade and battalion logistics situation report (LOGSITREP), logistics status (LOGSTAT), and logistics spot reports in accordance with approved standard operating procedures (SOP).
- Planning future logistics operations in coordination with the S4.
- Developing and maintaining tactical and CSS overlays.
- Developing the CSS synchronization matrix.
- Keeping the BSB abreast of the logistics situation and future support requirements.[3]

The headquarters section is also equipped with unique communications equipment, which allows for theater-wide communications. These systems include:

The battle command sustainment support system (BCS3). This system is the Army's maneuver sustainment C2 system. It aligns sustainment, in-transit, and force data to aid commanders in making critical decisions. This system capability provides operators the complete logistics picture in the form of a "running estimate." BCS3 provides a map-centric display on a commercial laptop, which provides a thorough technical and visual picture of the battlefield; the ability to plan, rehearse, train, and execute on one system; and a systems software that can operate on unclassified or classified networks.

Very small aperture terminal (VSAT). This system serves as the satellite communications system that allows the BCS3 and the maintenance platoon's standard Army maintenance system-enhanced (SAMS-E) to transmit and receive data.

CSS automated information systems interface (CAISI). This system is a secure, wireless local area network (LAN), which provides the "last mile" connectivity between logistics automation systems and VSAT-type networks. CAISI provides wireless line-of-sight (LOS) transmission, encryption on all wireless LAN links, and a digital subscriber line backup capability for a non-LOS requirement within a 3-kilometer distance (extended version has greater distance).

Movement tracking system (MTS) controller station. This system is a satellite-based, messaging and mapping system that provides asset visibility of and communication with transportation assets. This system is designed to be integrated with command post operations.

MTS vehicle mounted. This vehicle-mounted system provides the FSC commander with the same capability as the controller station while on the move.

All of these systems combine to provide the FSC and the CAB with a logistics common operating picture (COP) and a "reachback" logistics capability. When these systems combine with the CAB's Army battle command system (ABCS) suite, it creates a complete picture of the battlefield for the battalion commander. For example, a CSS communications architecture would include the following equipment: one M1068 carrier command post; two Force XXI battle command brigade and below (FBCB2); 27 M249 squad automatic weapons (SAWs); one MK-19; two M1083 medium tactical vehicles (MTVs); and one M149 water trailer. Key personnel include: a multifunctional logistician commander; a mechanical maintenance supervisory first sergeant; and a transportation corps executive officer.

The field feeding section. The FSC food service section provides class I food service and food preparation. The food service section prepares and delivers hot meals to the maneuver company teams. It distributes prepackaged food, prepared food, or both. It provides one heat-and-serve meal and one cook-prepared (A or B ration) meal per day.

Central to the food service section's mission is its ability to task organize and deploy with company teams and support remote feeding sites using the kitchen, company level, field feeding-enhanced

(KCLFF-E), as well as central feeding sites using the containerized kitchen (CK).

The CK is a mobile field kitchen that can support 800 soldiers with up to three hot, cook-prepared or heat-and-serve meals per day. One CK replaces two mobile kitchen trailers and has a greater food-preparation capability. The CK is mounted on a tactical trailer and towed. Its major features include electrical power from an on-board tactical quiet generator (TQG), an environmental control for heating and cooling, and 60 cubic feet of refrigerated storage. The CK provides food preparers the options of roasting, grilling, boiling, frying, and baking. It also has running water, a protected serving line, and ventilation to clear out exhaust and cooking byproducts.

The KCLFF-E is used for field feeding company-sized units. It is designed to heat, deliver, and serve one heat-and-serve ration per day for up to 200 soldiers. It also has a limited capability to provide perishable and shelf-stable meals prepared by food preparers. The KCLFF-E requires two food service specialists to operate, with assistance from the supported unit. The KCLFF-E is moved using a high mobility, multipurpose wheeled vehicle (HMMWV) or larger vehicle.

To operate to full capability, a FSC field feeding section requires: two CKs; five KCLFF-Es; one M2 .50-caliber machine gun; two MK-19 40mm grenade machine guns; three family of medium tactical vehicle (FMTV)-series vehicles; five HMMWVs; and 23 food service specialists.

Distribution platoon. The mission of the distribution platoon is to provide supply and transportation support to the CAB. The platoon is made up of a platoon headquarters section, a class III (POL) transportation section, a general supply section, and a class V (ammo) transportation section. The platoon receives, transloads, and distributes all classes of supply with the exception of class VIII; however, the platoon may distribute class VIII based on battalion standard operating procedures (SOPs). The platoon is capable of distributing supplies via unit distribution (combat logistics patrols), supply point distribution (forward operating base-centric), or both. It also has the ability to conduct simultaneous class III and V support to line companies, headquarters companies, and the FSC. The platoon provides its own security while conducting combat logistics patrols or it can be augmented by maneuver forces based on mission, enemy, terrain, troops, time, and civilians (METT-TC).

To operate to full capacity, the distribution platoon requires one FBCB2; one forward area water point supply system; 12 M978 heavy expanded mobility tactical truck (HEMTT) fuelers; one M977 HEMTT cargo; five M1120 HEMTT load handling systems; five M1075 palletized loading systems (PLS); five M1083 MTVs with ring mounts; five M2 .50-caliber machine guns; one container handling unit (CHU); one quartermaster corps platoon leader; one 92A40 automated logistics specialist platoon sergeant; 13 petroleum specialists; one water treatment specialist; 28 motor transport operators; and one automated logistics specialist.

The real shortfall of the distribution platoon is a lack of ammunition specialists (89B) within the platoon. The class V section is composed of only motor transport specialists and the battalion relies on these specialists to get ammunition management on-the-job-training.

Maintenance platoon. The maintenance platoon provides field maintenance to the CAB. With more than 140 soldiers, the maintenance platoon is larger than most companies, consisting of nine sections, which include the platoon headquarters, maintenance control, maintenance, service and recovery, and five company-level field maintenance teams (FMTs). The platoon has a wide variety of military occupational specialties, which provides a robust maintenance capability. The maintenance platoon supports various systems, including M1-series tanks, M2/M3-series fighting vehicles, construction equipment, tracked vehicles, wheeled vehicles, weapons systems, fire control systems, power generation equipment, communications equipment, specialty electronic devices, utility equipment, and quartermaster and chemical equipment such as pumps, hoses, and water/fuel systems.

The platoon maintains limited quantities of combat spares (prescribed load list and shop/bench stock) in the maintenance control section. The platoon is also responsible for the unit maintenance collection point. When a company is detached from the battalion, the FSC commander detaches a supporting maintenance package that includes personnel, tools, test equipment, and prescribed load list (PLL) stocks necessary to support the company, which usually includes the habitual field maintenance team and any additional capabilities required by the mission.

The maintenance platoon headquarters section provides C2 and supervision for all platoon administrative functions. With guidance from the FSC commander, the headquarters section monitors established maintenance priorities, provides recommendations for reinforcing support, and plans and conducts all necessary platoon training activities.

The maintenance control section is the primary manager for all field maintenance in the HBCT CAB and serves as the "nerve center" for the battalion's maintenance activities. The maintenance control section performs all of the Army maintenance management system (TAMMS) and dispatching operations, and tracks scheduled services for the CAB using SAMS-E. All company team SAMS-E boxes and PLL clerks are collocated with the maintenance control section. The maintenance control officer (MCO) manages all the SAMS-E operators. The SAMS-E clerks operating each company box process each DA Form 5988-E (equipment inspection maintenance worksheet) completed by the operator or crew and verified by the FMT. U.S. Army Field Manual-Interim (FMI) 4–90.1, *Heavy*

"The maintenance platoon provides field maintenance to the CAB. With more than 140 soldiers, the maintenance platoon is larger than most companies, consisting of nine sections, which include the platoon headquarters, maintenance control, maintenance, service and recovery, and five company-level field maintenance teams (FMTs). The platoon has a wide variety of military occupational specialties, which provides a robust maintenance capability."

Brigade Combat Team Logistics, defines the responsibilities of the maintenance control officer as: "…the principal assistant to the commander, both battalion and FSC, on all matters pertaining to the field maintenance mission. The MCO serves as maintenance officer for the maneuver battalion and FSC. … He is responsible to the commander for the management of the combined efforts of the maintenance control section, maintenance section, service and recovery section, and the maintenance system teams."[4]

This eliminates the need for maneuver commanders to pull a battalion motor officer (BMO) "out of hide." Battalion commanders now have a school trained maintenance officer with supervision (the FSC commander) to manage their fleets! The MCO is also aided by a maintenance officer, usually a warrant officer, and a sergeant first class who serves as the maintenance sergeant. The maintenance control section must coordinate recovery of the battalion's equipment, evaluate and ensure the quality of all maintenance completed by the maintenance platoon, monitor the status of equipment undergoing repairs, determine the status of the repair parts required to complete repairs, and perform maintenance according to the priorities established by the maneuver battalion commander.[5]

The service/recovery section provides recovery support to elements of the CAB and limited reinforcing recovery support to FMTs. When reinforcing recovery support is required, FMTs request support from the maintenance control section.

The maintenance section provides field maintenance for the HBCT CAB. This section primarily focuses on the headquarters company and the FSC. It also provides maintenance support to elements attached to the CAB and reinforcing maintenance to the FMTs.

Each FMT is tailored to support infantry, armor, and engineer companies. As the FSC commander task organizes his company, all or part of an FMT is assigned to the company teams to maintain habitual support doctrinally. The company commander is responsible for setting his company's FMT priorities; however, the FMT operates under the control of the company first sergeant and is supervised by the FMT maintenance noncommissioned officer in charge. FMTs carry limited onboard combat spares to help facilitate repairs forward. If inoperable equipment cannot be repaired by the FMT, due either to METT-TC or a lack of repair parts, the FMT uses recovery assets to relocate the equipment to the unit maintenance collection point (UMCP) or designated linkup point. FMTs are fully integrated into the combined arms units' operational plans and their combined assets include one FBCB2, three M88A1s, six M88A2s, two M984 HEMTT wreckers, one M1089 MTV wrecker, six M1075 PLS, six forward repair systems, 18 FMTV-series vehicles, and 13 M2 .50-caliber machine guns to operate.

"The service/recovery section provides recovery support to elements of the CAB and limited reinforcing recovery support to FMTs. When reinforcing recovery support is required, FMTs request support from the maintenance control section."

The Role of the FSC during Counter-insurgency (COIN) Operations

The FSC fulfills its primary mission of battalion-level support almost without fail at combat training centers and in theater. This is done through traditional methods of C2, distribution operations, and maintenance activities. However, the FSC has many other capabilities and possesses areas of expertise that are not being used. The following sections highlight tactics, techniques, and procedures to assist battalion commanders in exercising the capabilities of the FSC as it conducts both doctrinal and non-doctrinal missions. The FSC can perform valuable shaping operations such as combat logistics patrols, assessment of essential services [sewer, water, electricity, academics, and trash (SWEAT)], and limited support and training for host-nation security forces logistics.

Combat logistics patrols. The enemy seeks out the most visible and "easiest" targets to exploit in the media. The enemy realizes the most vulnerable targets are lightly armored logistics convoys. Nothing looks better on television than a blazing fuel tanker in the middle of the day.

The Army is at its best at night, using most of its assets watching, listening, and poised to attack. Since the enemy chooses to attack logistics targets, we should operate them at night when we are best prepared. Combat logistics patrols should not be used as "bait," as some may suggest, but supplies must be moved across the battlefield, so we should force the enemy out of hiding on our terms. Assets should be positioned at critical points on the battlefield where they can best engage the enemy.

The most common mission for the FSC is combat logistics patrols and much has been written on the subject of convoy security in the past few years. However, it is not the intent of this article to discuss convoy battle drills and things of that nature, but to discuss decisions that must be made by battalion commanders concerning security, air/ground integration, and setting the conditions for success.

Security. Every unit rotating through the National Training Center has difficulty determining who has responsibility for the security of combat logistics patrols. Each unit struggles with convoy operating procedures and the allocation of combat forces to the FSC. The question of, "Who's the convoy commander?" becomes a heated topic of discussion, the answer to which is not clear and must be

settled by the unit through standard operating procedures. There are basically three methods of security for a combat logistics patrol:

- Organic assets — the FSC uses organic assets to provide its own security.
- Allocating external assets — roughly a platoon-sized element is temporarily attached to the FSC for the conduct of the mission.
- Combination of both — platoon-sized elements secure the patrol through more dangerous terrain and the FSC secures itself through less dangerous terrain. This usually involves link up operations with multiple companies within the battalion area of operations.

All three of these methods can be successful; the decision comes down to METT-TC and what levels of training soldiers assigned to the mission have.

Air/ground integration for combat logistics patrols. The use of Army aviation is almost automatic when planning for ground combat operations. Immediately, the battalion S3 contacts higher headquarters to schedule air assets for the next cordon and search operation; but what about combat logistics patrols, especially if they are "self securing?" Is the use of an air weapons team for convoy security a good economy of force mission? Aviation support provides valuable firepower and "eyes forward" for combat logistics patrols. They can detect improvised explosive devices (IEDs) and other potential threats, and they can provide accurate fires for the convoy commander as the unit moves through the kill zone.

Training FSC leaders is critical to integrating aviation; however, planning and using close air support is not yet taught at the logistics schoolhouse. These tasks need to be incorporated into home-station training at least at the squad leader and above levels, and the use of air support can be refined at combat training centers by all elements within the battalion. Finally, on deployment, battalion S3s should include combat logistics patrols into habitual aviation requests to brigade.

Setting the conditions. Much has been written on setting conditions for offensive operations. Terms, such as tactical patience and momentum, are often used, but we do not apply the same level of thought and analysis for tactical logistics operations. More often than not, the battle captain does not even know when the FSC is on a mission because another operation has his attention. Below is an example of a conditions checklist that could be helpful for battalion S3s and battle captains during planning, coordinating, and tracking combat logistics patrols:

"Combat logistics patrols should not be used as "bait," as some may suggest, but supplies must be moved across the battlefield, so we should force the enemy out of hiding on our terms. Assets should be positioned at critical points on the battlefield where they can best engage the enemy."

- Identify the mission, route, and frequency/call-sign of the combat logistics patrol.
- Determine if aviation support is on station; identify frequency/call-sign.
- Ensure the security force linked up with the FSC and completed rehearsals.
- Determine when the last route clearance was conducted.
- Identify friendly operations in progress or planned during the combat logistics patrol; determine if there is a conflict.
- Ensure the quick-reaction force is postured to support the combat logistics patrol.
- Determine if units have been notified that a combat logistics patrol is moving through their area of operations.
- Confirm the latest intelligence for the route.
- Ascertain if the patrol will be traveling through Tier I IED sites at prime hours.
- Ensure the convoy commander turns in a final manifest and receives the latest intelligence update.

Assessing essential service requirements. The FSC has a wide variety of military occupational specialties that can be readily applied on commercial equipment in civilian jobs. One of the primary reasons many soldiers enlist in the Army is to obtain job skills they can use after completing enlistments. These same skills can be used to assist local populations during counterinsurgency operations. Chapter 8 of the new U.S. Army Field Manual (FM) 3-24, *Counterinsurgency*, states: "In general, according to existing U.S. military logistics doctrine, there is no provision for U.S. forces to become decisively or exclusively engaged in providing essential services to the HN [host nation] population during COIN operations. However, this doctrinal position does not prohibit units from using applicable skills and expertise resident in their military organizations to help assess essential HN service needs. In conjunction with these assessments, logistics and other units can also be used to meet immediate needs where possible and in the commander's interest, and to assist in the handoff of essential service functions to appropriate U.S. Government agencies, HN agencies, and other civil support organizations."[6]

In other words, if you have the ability, do what you can with what you have until other measures can be implemented. By having a FSC within the battalion, commanders have the ability to do more, and extending assistance to the local populace will lend credibility to commanders. The FSC commander and the civil affairs team leader/S5 can work together to build area assessments for the battalion commander. Using the SWEAT framework, the list of available capabilities includes:

- Sanitation — water treatment specialist and field sanitation expertise in food-service section (along with

headquarters company medical platoon).

- Water — water treatment specialist.
- Electricity — power generation specialists.
- Academic — all can aid in training and education for critical job skills.
- Transportation — assessment of rail/bus/ferry/port capacities and facilities, and assessment of mechanical maintenance of rail/bus/truck/ferry operating equipment.
- Food supply — food-service section inspects packaging and facilities with veterinary assistance on food quality and vector control.
- Fuel — petroleum specialists inspect and test fuel facilities and storage.

A good configuration for a SWEAT team might include: a security team; a civil affairs team; sanitation/water/fuel/food crew with one 92W water treatment specialist, two 92F petroleum supply specialists, one 63J quartermaster/NBC equipment repairer, one 92G food-service specialist, and one 68W (HHC) combat medic; an electrical crew with one 52D power generation equipment repairer and one 52C utilities equipment repairer; an academic crew with a civil affairs team; and a transportation crew with a distribution platoon leader.

Host-nation security forces logistics. Since the advent of military transition teams, deployed units are not as involved with the Iraq/Afghanistan security forces logistics operations as they once were; however, units may still be called on to assist these forces with training and/or logistics support. The most significant logistics challenge in training host-nation security forces is enforcing accountability and curtailing corruption. To better illustrate this point, FM 3-24 states: "Logisticians conducting such training should expect to find themselves repeatedly emphasizing the long-term benefits of supply discipline and materiel accountability and the importance of those practices to the security and development of the host nation. For this reason, emphasis should be placed on inventory procedures. Simultaneously, the black market should be monitored for the presence of pilfered military equipment as a means of determining the effectiveness of logistics procedures and accountability training."[7]

Other areas of logistics training may include warehousing and transporting supplies, combat logistics patrols, maintenance, and recovery operations. Units may also be called on to provide emergency resupply to host-nation security forces. If so, then contingency stocks of Halal (food permissible under Islamic law), meals ready to eat (MREs), bottled water, and ammunition should be kept on hand. Ammunition can be obtained through captured stocks. Overall, support to host-nation security forces should have minimal impact; however, units will increasingly conduct joint patrols with host-nation forces, and are better postured to react quickly to urgent needs.

Maintenance support to the combined arms battalion. Current doctrine for maintenance support to the CAB is written in the context of supporting high-intensity conflict (HIC) operations. FMI 3-90.5, *Heavy Brigade Combat Team Combined Arms Battalion,* discusses allocating field maintenance teams to CAB companies.[8] During a HIC fight, this is perfectly logical; but what about in the current forward operating base (FOB)-centric counterinsurgency?

When a preponderance of maintenance personnel is sliced out to companies, decentralized maintenance activities occur, as they should in a HIC fight; however, for units operating on battalion or larger sized FOBs, maintenance should be centralized at the battalion level. This enables a number of capabilities. Firstly, the maintenance control section has better visibility of the battalion's non-mission capable vehicles and parts statuses, which enable the maintenance control officer to better enforce maintenance priorities and surge mechanics for high-priority efforts. Secondly, maintenance personnel can better sustain 24-hour operations. It is important to remember than not only will mechanics be performing their primary duties, but will also have force protection requirements and other details. Historically, 30 percent of personnel from support units provide force protection at FOBs. Having all of the mechanics underneath the umbrella of the maintenance platoon ensures both the force protection and maintenance missions. Thirdly, the consolidation of maintenance personnel in a FOB environment provides for both the specialization and cross-training of mechanics, leading to better efficiencies in the production capabilities of the platoon.

A final recommendation for the employment of the FSC maintenance platoon is to establish a "service station" for patrols when they return to the FOB. This ensures combat vehicles are taken care of and returned to the fight in peak condition. The service station is a one-stop shop for line companies returning from missions (see Figure 2).

The changing role of Army food preparers. Current field feeding is primarily performed by logistics contractors. These contractors provide quality meals for over 90 percent of coalition facilities in Iraq and Afghanistan. Contractor services limit the role of Army food preparers to only providing prepared meals for soldiers working in remote locations. When Army food preparers are not performing their primary MOS functions, they perform security functions. The field feeding section in the FSC has 23 soldiers, which provides the commander with a good number of soldiers to accomplish many tasks. The field feeding section can be trained to conduct:

- Convoy/area security — takes the security burden off of line companies and ensures every combat logistics patrol has a maneuverable security element. This element can also perform security for area

Battalion Service Station

Tasks:

1. Conduct after PMCS
2. Report deficiencies to mechanic
3. Mechanic verifies fault and orders/installs parts
4. Refuel
5. Draw Class I, IV, V, and VIII
6. Repack vehicle for combat

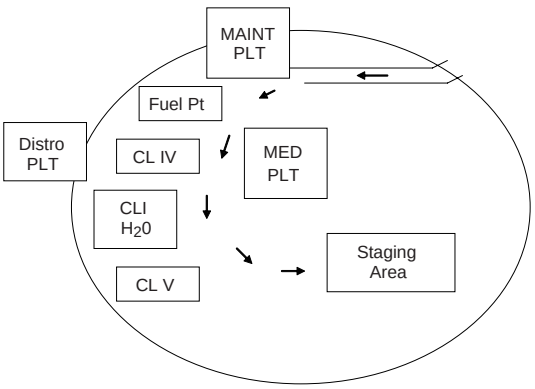

Figure 2

assessment teams or medical civilian-assistance programs (MEDCAPs).

• Personal security detachment — train approximately 16 soldiers to provide personal security for the battalion commander and other battalion leaders.

• Force protection for entry control points and other guard duty.

• Dislocated field feeding — the FSC should maintain a reserve of four food preparers to operate two KCLFF-Es in case of unforeseen out-of-sector missions.

The field feeding section should have four M1114s, equipped with M2 .50-caliber machine guns and multiband intrateam radios (MBITRs) for dismounted operations. The key to success for these security operations is home-station training, followed by training at a combat training center prior to deployment.

Other nontraditional logistics missions. The FSC is also capable of performing the following nontraditional missions:

• Non-standard casualty evacuation. The FSC has 28 FMTV vehicles that can mobilize to support casualty evacuation.

• Split-based operations. The FSC has enough communications equipment to support logistics C2 in two nodes.

• Female search teams. Since the FSC is the only unit that has females assigned at the battalion task force level, training all female soldiers in personnel search techniques allows units to search indigenous female personnel without violating cultural norms.

• Captured ammunition/arms holding area (CAHA). The FSC should operate the initial storage point for captured ammunition, arms, and equipment. This also provides for contingency stocks of ammunition, weapons, and armament repair parts for host-nation security forces.

Battalion Commander Responsibilities

Indeed, some battalion commanders place more emphasis on logistics than others. However, battalion commanders can ensure FSCs operate to full potential and are full members of the battalion by following a few recommendations:

Integrating the FSC as a unit. This begins with the type of relationship the maneuver battalion commander has with the FSC commander. For example, if the battalion commander does not respect the FSC commander because of branch differences, then the rest of the battalion will not respect the FSC commander. The FSC commander is the senior logistician in the battalion and should be held fully responsible for the material readiness and supply status of the battalion. Additionally, FSC officers and soldiers should be held to the same standards as the rest of the battalion.

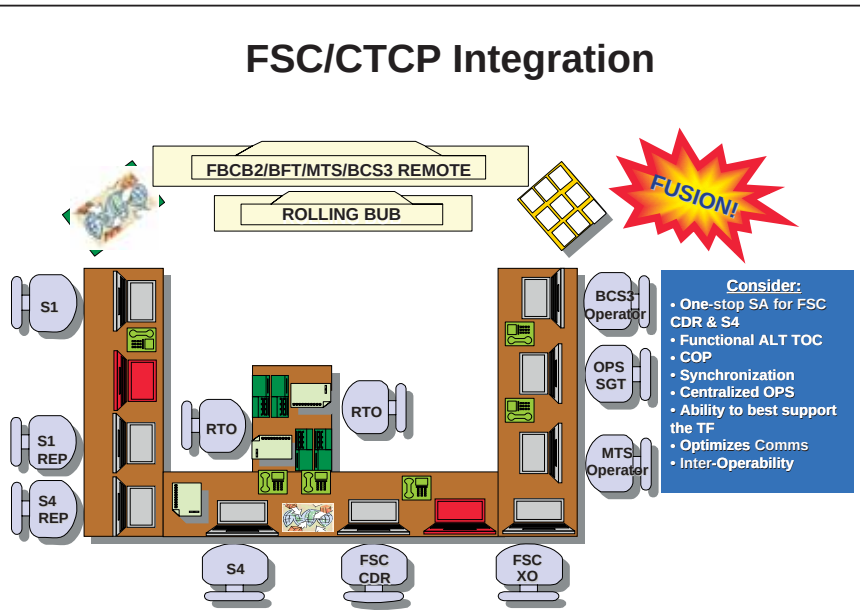

Figure 3

Integrating the combat trains command post and FSC command post. Units are finding much success consolidating combat service support C2 in one centralized command post. Many times, the S1 and S4 operate independently of the FSC commander, which creates a disjointed concept of support. Creating a "fusion cell" combines the S1, S4, and FSC, providing a "one-stop" point for administration and logistics (see Figure 3).

During battle tracking in the tactical operations center, FSC operations, including recovery missions and combat logistics patrols, should be planned, coordinated, and tracked just as other battalion operations.

Commanders should task the medical platoon to provide at least one medic to support FSC missions. The FSC has no organic medical capability and although the FSC will have first responders and combat lifesavers, having a true medic saves lives.

FSC operations should be fully integrated in all battalion training. The FSC should not be allowed to just simply feed, fix, and supply the battalion while the line companies train. The FSC should conduct convoy operations, tactical refuel and recovery missions, establish tactical feeding sites, and conduct crew-served and individual weapons training.

The FSC provides each supported battalion a robust logistics capability. The FSC can provide critical shaping and sustaining operations to be integrated with the other lines of operations. The FSC commander provides battalion commanders an executive agent for all logistics matters and ensures integration with higher levels of support. After fully integrating the FSC into the maneuver battalion, commanders will see just how effective their logistics systems are and how well they integrate with other combat operations.

Notes

[1]U.S. Army Field Manual Interim (FMI) 4-90.1, *Heavy Brigade Combat Team Logistics*, U.S. Government Printing Office (GPO), Washington, DC, 15 March 2005.

[2]Ibid.

[3]FMI 3-90.5, *Heavy Brigade Combat Team Combined Arms Battalion*, GPO, Washington, DC, 15 March 2005.

[4]FMI 4-90.1, *Heavy Brigade Combat Team Logistics.*

[5]Captain Eric A. McCoy, "Maintenance Management in the Heavy BCT," *Army Logistician*, September-October 2006.

[6]U.S. Army Field Manual (FM) 3-24, *Counterinsurgency*, GPO, Washington, DC, 15 December 2006.

[7]Ibid.

[8]FMI 3-90.5, *Heavy Brigade Combat Team Combined Arms Battalion.*

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"KING OF THE KILLING ZONE"

How Well Has It Held Up?

by Lieutenant Colonel Benjamin Harris

In 1989, Orr Kelly published the story of the evolution of the Abrams tank, *King of the Killing Zone*.[1] More than 18 years have passed since its publication, and it seems appropriate to evaluate the Abrams program, review its progress, and see how far it deviated from the original plans first started in 1972. It may seem unusual that 2007 is a significant milestone to conduct this analysis, but the Armor Center is conducting a major Abrams requirement analysis, for only the third time in the Abrams 30-plus years of development, to set the plans for the next 30 years!

The first major upgrade to the Abrams in the mid-1980s included a 120mm cannon upgrade; a nuclear, biological, and chemical (NBC) system; and armor enhancements. The second major upgrade in the mid-1990s added another armor upgrade, a digital architecture, a commander's integrated display for tactical situational awareness, and an independent sight for "hunter-killer" capability. The Armor Center's current task is to determine critical technologies required for the Abrams in 2016 and beyond.

Similar to the 1972 initiative by Lieutenant General DePuy, assistant vice chief of staff of the Army, to establish the big five, in September 2005, Lieutenant General Curran, director, Training and Doctrine Command (TRADOC) Futures Center, directed the Armor and Infantry Centers to begin the process of sustaining and modernizing Abrams and Bradley vehicles for the next 20 years and beyond.[2]

Today's initiative is called "the joint capabilities integration and development process." To begin the new process, however, it is critical to analyze the required capabilities and shortfalls much like the 1972 team. Surprisingly, the composition of the team today is quite similar, just a bit smaller.[3] Key personnel at the Armor Center, which includes the TRADOC Capability Manager for the Heavy Brigade Combat Team (TCM HBCT) and Directorate, Training, Doctrine, and Combat Developments (DTDCD), are assisted by acquisition officers with masters degrees and doctorates. The process is part science and part art. In 1972, the team realized they needed a better tank, with specific weight restrictions, at an affordable price. Those same constraints still exist, so how much progress have we made since the 1972 analysis?

Most believe the Abrams is a very capable tank; results from Operation Iraqi Freedom validate those opinions. The vulnerabilities of the Abrams are com-

mon to most modern tanks throughout the world. Two recently upgraded and modernized tanks, the Merkava and Leopard 2, have added belly armor and improved top-attack protection. But adding armor comes with a sustainability penalty. In the United States, heavy equipment transporters and tactical assault bridges are limited to 70 tons. So what should these limits be in 2016; in 2026?

Major General Desobry first imposed a weight limit for the tank of 46 to 52 tons; later, General Abrams set the upper weight limit at 58 tons based on his personal experience during World War II and analysis of Chobham armor effectiveness provided by Lieutenant General Depuy.[4] The added weight made it difficult to meet the $507,790 price tag in 1972 dollars.[5] The weight also made it difficult to meet the 25-to-1 horsepower ratio established by Major General Desobry.[6]

Today, the tank weighs nearly 70 tons when fully combat loaded. Recent survivability upgrades, such as the tank urban survivability kit and contemplated mine-protection kits, could push the Abrams' weight close to 74 tons. These upgrades only improve protection for specific areas and are projected to be required future key capabilities.

The argument in 1972 was that speed and power saves lives equivalent to armor protection. Today, situational awareness is paramount and speed sometimes creates confusion. The challenge now is that the larger threat formations and systems common during World War II have been replaced with an asymmetric threat, which operates mostly as dismounts using remotely controlled devices elaborately hidden among the normal debris common in urban landscapes. Additionally, the lethality of these small, well-hidden devices greatly exceeds that of similarly sized items used during World War II.

When situational awareness and early detection fails, only added armor can reduce the risk to crewmen. The Armor Center has concluded that if the Abrams must grow to 74 tons, then future tactics, techniques, and procedures will have to adjust to take the weight increase into account. This is a radical change in philosophy. Previously, nearly all Abrams variants focused on frontal protection and the Armor Center is proposing the tank deploy with current levels of frontal protection to stay under 70 tons, if the projected threat allows. However, the Armor Center is not requiring the Abrams' weight to be reduced to less than 70 tons.

A 70-ton vehicle comes with a huge price tag. An M113A3, considered by many to be too light for 21st-century warfare, has one advantage over the Abrams — it operates for about $50 dollars per mile, compared with $400 per mile for the Abrams. Even the Bradley, now closer to 37 tons can operate for about $168 per mile. Considering that the Abrams has grown less than 21 percent of its original weight, compared with the Bradley growing nearly 57 percent greater than its original weight, another few tons seems reasonable. Although both vehicles are expensive to operate, they have improved in reliability and maintainability, mostly through advancements in electronic technology.

The original M1 Abrams team was also challenged by the cost of the tank; however, they appear to have focused on unit cost rather than total life-cycle cost. For this reason, the Armor Center established a key system attribute, which mandates that any future variant of the Abrams must be easier to maintain and more reliable, with the assumption of lowering total ownership costs.

In chapter four of *King of the Killing Zone*, Kelly raises the question: "What price armor?"[7] Using the relative share of the gross domestic product conversion in a 2005 cost projection analysis, today's tank should cost around $5.1M. In actuality, the tank is closer to $7M. If viewed in terms of cost to weight, the goal was around $88,000 per ton; today's Abrams costs a little over $100,000 per ton. A 14-percent cost growth seems reasonable, if the Abrams achieved a 20-percent increase in weight/survivability, until viewed in terms of total life-cycle costs.

Track wear has been the Achilles heel of the Abrams tank program, as it is the second largest consumable expense in the Army, only surpassed by meals ready to eat (MRE) consumption.[8] Life-cycle costs not only include consumables, such as track, batteries, shock absorbers, weapons system barrels, and headset-microphones, but also repairable items such as engines, transmissions, electronic units, generators, and heaters. The cost to sustain the Abrams for one year is staggering — in 2006, the top-10 consumption and repair bills for the Abrams tank program exceeded $430M. Compared to that figure, the top-10 consumption and repair bills for the Bradley, the new M1068A3 command post, the Paladin self-propelled howitzer, the M1064A3 mortar carrier, the M577A3 command post, and the M113 family of vehicles (FOV) totaled around $255M. In 2006, the repair bill on the

"The true value of the Abrams can only be measured in terms of its lethality and survivability. That value cannot be quantified, however, when compared to the countless lives the Abrams has saved, not only of armor crewmen, but of other soldiers within the formation who know that when they call "9-1-1," the Abrams tank will bring the 'HEAT.'"

Abrams gas turbine engine alone was $229M.

When viewed in total, the Abrams requires nearly 62 percent of the cost to sustain a HBCT, but actually accounts for only 22 percent of the tracked vehicles within the HBCT formation. Viewed in terms of weight being the deciding cost factor, experts underestimated the life-cycle costs that added mobility, made possible with a gas turbine engine, would impose throughout the tank program's life. The true value of the Abrams can only be measured in terms of its lethality and survivability. That value cannot be quantified, however, when compared to the countless lives the Abrams has saved, not only of armor crewmen, but of other soldiers within the formation who know that when they call "9-1-1," the Abrams tank will bring the "HEAT."

The Abrams crewman is the cornerstone of any future Abrams upgrade. For starters, the tank is too hot to operate comfortably for extended periods during summer months. Modern technology is amazing; however, it comes with two unavoidable penalties — advanced electronics generate heat and consume electricity. Overheating electronics are unreliable. A future key capability for the Abrams is to keep the crew capable of efficiently operating in all climates and, at the same time, provide greater reliability of its internal electronics. It is a very difficult challenge placed on our future materiel developers. A robust "cooling" system might compete for electricity with the other required electronics on a platform that has used nearly all available surplus electricity. It may seem unimportant, but a generator capable of an order of magnitude increase in available electrical power will enable the tank to add other technologies, such as active protection systems, remotely controlled weapons that reduce soldier exposure to small arms, rearward or 360-degree closed-hatch/in-close situational awareness, helmet-mounted displays, threat warning and jamming systems, or possibly electromagnetic armor. Much of this new technology, such as an active protection system, comes with yet another huge weight penalty — close to 1 ton!

So what was the original team's real issue with weight? Was it the cost of armor or the limitation of bridges? I think it had more to do with mobility. Many tank battles during World War II were cross-country dashes or occurred on unimproved dirt paths meant for horse-drawn wagons. Senior leaders directing the Abrams program during the 1970s had seen the heavy German tanks easily outmaneuvered by lighter, more agile, American tanks. In 1972, the United States focused on tank-on-tank warfare and mobility in the Fulda Gap, and, in 1972, the enemy had lighter and more mobile tanks.

It was as difficult then as it is today to predict the benefit and cost of a 58-ton tank. Is it any different today? I think it is. Urbanization is the wave of the future and urbanization means more roads. If we are trying to influence people who live in the city, then surely the Abrams of the future will operate in the city.

Today's cities have much better road standards than they did 60 years ago. If the future area of operations has little road infrastructure, then it is debatable if it is a national security interest. Otherwise, lighter, more mobile, forces, such as the 82d Airborne Division, 101st Air Assault, Stryker brigades, Special Forces, or lighter allied formations, will be relied on to carry out operations. The only limitation we face today is a chemical engineering limitation; how much friction can track rubber glued to metal withstand? If the rubber fails, then we will have more frequent track replacement. Until that discovery is made, the Armor Center is willing to accept a 70-ton tank, with add-on kits that make it closer to 74 tons, for one reason — soldier survivability.

Loader's Armored Gun Shield (LAGS) Abrams Reactive Armor Tile (ARAT)

Increasing soldier survivability is top priority for the Armor Center which is in the process of evaluating the tank urban survivability kit (TUSK). TUSK I will be delivered during July 2007 to the Iraqi area of operations. As mentioned in previous *ARMOR* articles, TUSK I will include the improved loader's armored gun shield (LAGS) and Abrams reactive armor tile (ARAT), adding nearly two tons to the tank. A second iteration of TUSK is in its early stages of development and may include additional belly armor similar to that already in use by the Israelis and on Leopard 2 A6 tanks recently sold to Sweden.

Weight reduction is important, but is not a critical area of concern. A target weight of 70 tons should be possible through advancements over the next 10 years in lighter, more capable armor technology — key is where to apply this extra armor capability. Protection for the flanks and belly are projected to be future key required capabilities, as well as the capability to keep the crew efficiently operating in all-weather climates while simultaneously providing greater reliability of internal electronics. These critical challenges led the Armor Center to establish a key system attribute mandating that any future variant of the Abrams must be easier to maintain and more reliable.

There has been some argument that tankers are obese and too kinetic in their methods. The misconception that tankers lack the social skills and grace required to win the hearts and minds in 21st-century warfare is ludicrous! Today's soldiers are capable of quickly transitioning from "steely-eyed-killers" to humanitarians handing out bottles of water to children playing soccer, even after one might have taken a shot at us with a paintball gun. However, the tank is not nice; it does not "transition." It is growing to 74 tons and carries over 40 high-explosive warheads that can destroy nearly everything found in the urban jungle. It holds close to 11,000 rounds of 7.62mm machine gun ammunition (more than can be carried by a rifle platoon). It shoots one 120mm canister round capable of dispensing 1,100 tungsten balls with a lethality greater than that of 1,000 M4 rifles. It can crush a car and will kill the enemy if someone "breaks the glass in case of emergency!" It still is King of the Killing Zone!

Notes

[1]Orr Kelly, *King of the Killing Zone*, W.W. Norton and Company, Inc., New York, February 1989, p. 88.

[2]*King of the Killing Zone*, p. 90. Colonel Charles Heiden, Combat Development Command, led the initial effort for tank requirements analysis in 1972.

[3]Ibid.

[4]Ibid., p. 128.

[5]Ibid., p. 136.

[6]Ibid., p. 98.

[7]Ibid., p. 111.

[8]U.S. Army Materiel Command, data on consumable expenses for the U.S. Army in 2004.

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Integrating Armor into Personnel Recovery Operations

by Captain Romeo P. Cubas, U.S. Marine Corps

The 507th Maintenance Company mistakenly entered the city of An Nasiriyah on the morning of 23 March 2003. Iraqi soldiers, al Quds militia, and Saddam Fedayeen fighters would ambush the lost unit, killing and wounding 21 soldiers and taking six prisoners. Over the next week, while Task Force Tarawa continued to fight a determined resistance, the U.S. Army, Air Force, Navy, and Marine Corps prepared to conduct what would be the first successful rescue of an American prisoner of war since World War II. Marine Corps M1A1 tankers contributed to this joint operation by bringing additional shock, awe, and firepower to an already impressive combined arms force. Operation Iraqi Freedom saw tanks exponentially prove their worth in the urban environment, and the role of armor would expand into personnel recovery (PR) operations.

Chairman of the Joint Chiefs of Staff Instruction (CJCSI) 3270.01A defines personnel recovery (PR) as "…the recovery and return of U.S. Military, DOD civilians, and DOD contractor personnel who are isolated or missing while participating in a U.S. Government-sanctioned military activity or missions in an uncertain or hostile environment, or as determined by the Secretary of Defense."[1] The Army's PR philosophy is one of leadership and accountability and every command makes every effort to ultimately recover 100 percent of its personnel.[2]

In April 2003, during the battle for An Nasiriyah, Iraq, I commanded 3d Platoon, Alpha Company, 8th Tank Battalion, Task Force (TF) Tarawa, 2d Marine Expeditionary Brigade (MEB). This tank platoon, along with Marine artillery, aviation, force reconnaissance, and infantry, participated in a truly joint PR operation alongside special operations forces (SOF) from the U.S. Army, Air Force, and Navy. Operation Iraqi Freedom saw tanks exponentially prove their worth during urban operations and expand their role to include PR.

Experience Context

During Operation Desert Storm, Iraqi military commanders learned that in open land warfare they could not match the technological superiority of the United States military machine. If the Iraqi army wanted a different outcome in a future war, the fighting would have to be waged in the streets of Iraqi cities. If Saddam

"We need to focus on Soldiers being able to take care of themselves, then able to take care of their buddies, then able to take care of their larger team…It's all part of the Warrior Ethos: Place the mission first, never accept defeat, never quit, and never leave a fallen comrade."

— General Peter J. Schoomaker

"If Saddam Hussein were to be removed from power, the U.S. military would have to move into Baghdad. Iraqi generals decided that the most logical defense along a southern approach would have to occur in Iraq's fifth largest city and home of the 11th Infantry Division. An Nasiriyah would provide cover from U.S. air superiority, since Iraqi commanders seriously doubted that Americans would bomb 500,000 Iraqi citizens."

Hussein were to be removed from power, the U.S. military would have to move into Baghdad. Iraqi generals decided that the most logical defense along a southern approach would have to occur in Iraq's fifth largest city and home of the 11th Infantry Division. An Nasiriyah would provide cover from U.S. air superiority, since Iraqi commanders seriously doubted that Americans would bomb 500,000 Iraqi citizens.[3]

The city of An Nasiriyah was heavily defended by an entire Iraqi army brigade along its southern portion bordering the Euphrates River. Another brigade dug in inside the city, and a third brigade was located north of the Saddam Canal. Technicals, armored personnel carriers (APCs), mortars, artillery, anti-aircraft artillery (AAA) guns, and tanks were spread throughout the city in well-planned and well-fortified positions. Arms and ammunition caches were located in strategic locations and included mosques, schools, and hospitals. Five hundred of Uday Hussein's fanatical henchmen, the Saddam Fedayeen, were sent to the city to ensure the 11th Infantry Division and the local al Quds militia remained loyal and motivated.

Members of the Ba'ath party militia also had a great deal at stake in defending the city, since they controlled and lived a luxurious life at the expense of the local Shia population.[4] In and around An Nasiriyah, the combined strength of regular and irregular forces was somewhere between 6,000 to 10,000 men. Iraqi commanders had planned a deliberate defense and were ready to draw approximately 2,000 U.S. forces into a deadly urban fight.[5]

Unfortunately, the first unit to face this defense was a logistics company from Fort Bliss, Texas.[6] The 507th Maintenance Company was part of an impressive U.S. Army supply line, and its primary mission was to provide maintenance, supplies, and support to a patriot missile battery that would advance north toward Baghdad with the 3d Infantry Division. The 507th's company commander entered the Army as a dental assistant and eventually worked his way into commanding mechanics, cooks, computer technicians, and clerks who lacked basic military fighting skills. He did not expect these support troops to see combat and even had his soldiers' hand grenades and AT-4 antitank weapons collected and locked up prior to combat operations.[7]

The 507th departed Attack Position (AP) Dawson, just south of the Kuwait-Iraq border, at 0700 hours on 20 March. Due to the rough cross-country travel, the unit only moved 35 kilometers in 4 hours before stopping to rest. The next evening, they traveled 80 kilometers northwest across the barren desert and the convoy soon began to feel the effects of off-road travel in southern Iraq.[8] Darkness, disorientation, soft sand, and flat tires mired the convoy causing it to drop farther behind from the rest of the logistics train.

On the evening of 22 March, as the 507th drew closer to An Nasiriyah, TF Tarawa, 2d MEB, from Camp Lejeune, North Carolina, was tasked to conduct a relief in place (RIP) with the 3d Brigade Combat Team (BCT) near Talill Air Base at 0430 hours on 23 March. The 3d BCT felt it was unnecessary to move north on Highway 7 and clear the southern end of An Nasiriyah, as had been planned. Instead, it proceeded along Highway 1 to the Euphrates River and turned left on to Highway 8 to continue its move toward the west.

The Army had not heard anything about a possible capitulation from the 11th Infantry Division and had no intention of going into the city to seize its eastern bridges. Marine commanders were worried about the condition of the Highway 1 Bridge located north of the Euphrates River, since it was a new highway with some portions still under construction. The 1st Marine Division had recently left the southern Al Luhays oilfields and was charging toward Baghdad on Highway 1. The commander of I Marine Expeditionary Force (I MEF) determined it was critical to develop a second avenue of approach, in the event Saddam Hussein ordered an attack on advancing Marines, and chose Route 7 as the second route.[9] TF Tarawa was assigned as the main effort and ordered to seize the bridges along that route by 230700Z (1000 hours local time).

The 507th Maintenance Company was to proceed north along Highway 8, "Route Blue," and turn left at the intersection with Highway 1, "Route Jackson," avoiding An Nasiriyah altogether. A manned check-

point had been put in place to direct stragglers to the detour, but by the time the 507th arrived, it had been abandoned.[10]

At approximately 0600 hours, the 507th's convoy crossed over a railroad and traveled past a company of dug-in Iraqi tanks, and an outlying industrial area composed of oil storage tanks, power lines, a gas station, and a garbage dump. At a significant intersection with clearly marked signs, Highway 8 went off to the west through the southern portion of the city toward the Highway 1 Bridge.[11] The 507th missed that turn, drove straight through downtown An Nasiriyah, and was ambushed with a "torrent of fire."[12] Eleven members of the 507th would eventually perish as a result of combat actions that morning. Seven others would become Operation Iraqi Freedom's first prisoners of war (POWs).[13]

The PR Operation

Within days, a concerned local Iraqi lawyer confirmed that an American POW was being held at the Saddam Hussein Hospital. After 2 days of gathering intelligence, he brought five different and very detailed maps that he and his wife had made. The illustrations pointed out the exact room of the captured soldier. The lawyer also provided the security layout, reaction plan, and times of shift changes. Through his surveillance, he had counted 41 Iraqi soldiers or insurgents at the hospital, with four in civilian clothes guarding the captured soldier's room. He mentioned that they were armed with Kalaschnikov AK-47 assault rifles and carried radios. His reconnaissance further determined that the building's rooftop could support a helicopter landing.[14] After all the human intelligence had been received and authorization was granted from the highest military authorities, preparations for a personnel recovery operation were underway. The U.S. Army would take command of the rescue mission, turning TF Tarawa's command post into a sophisticated reconnaissance operations center.[15]

A Marine 2d Force Reconnaissance team moved in from the west close enough to observe and listen to activity from the Hussein Hospital grounds, and reconnaissance snipers were positioned to prevent enemy forces from thwarting the rescue.

TF Tarawa began relentlessly attacking the enemy with overwhelming artillery and precision air strikes from AV-8B Harriers and Air Force Special Operations Command (AFSOC) AC-130 Spectre gunship howitzer rounds.[16] By early morning on 1 April, civilian communications equipment, to include satellite phones and computer connections, were blacked out.[17] Shortly before midnight, electrical power was cut and only the hospital's emergency generators provided light. Real-time images of the area were provided by a Predator unmanned aerial vehicle (UAV) circling overhead, improving the situational awareness of the joint operations center.[18] The battlefield had been prepared and the planning stages of the POW rescue operation were nearly complete. While air supremacy and overwhelming reconnaissance was achieved, heavy armored combat power was still lacking.

"At 1155 hours, Blue 4, assigned as the platoon's plow tank for the operation, cleared a route near the Saddam Canal Bridge through cars that had been placed along the northwestern portion of Highway 7 earlier in the week to block enemy vehicles. As the plow tank pushed a disabled vehicle off the road, the remaining two tanks led the convoy across the Saddam Canal Bridge toward the Saddam Hussein Hospital, a distance of approximately 3 kilometers."

To fill this void, a tank platoon from Alpha Company, 8th Tank Battalion, was needed to escort a convoy of 18 vehicles carrying elite forces from the U.S. Army and Navy into the center of the city. Due to a shortage of readily available parts and continuous combat operations, the maintenance status of tracked vehicles in theater was less than desirable; however, with three tanks, Alpha Company's 3d Platoon (Blue) was provided enormous combat power and shock effect.

As soon as the tank platoon received its warning order to conduct a POW mission, the tankers began preparing their vehicles. Marines immediately performed track maintenance and refueled their vehicles. Tow bars were already in place and ammunition was evenly cross-leveled, but nonessential items, such as rucksacks, meals ready to eat (MRE) boxes, and fuel cans were unloaded to avoid any accidental losses or fire hazards.

Special operations commanders coordinated with tank platoon commanders to seek advice on how to position vehicles to effectively block enemy avenues of approach from the center of the city. Satellite imagery aided the tank platoon in identifying possible individual vehicle positions and gave direction on where to place target reference points to properly control direct fire. Accurate imagery and thorough map rehearsals allowed all three tanks to share a common operating picture.

As soon as the Marine tank platoon was attached to the SOF unit, the tank commanders ensured they had positive communications with each other and the rest of the rescue team. Loading radio frequencies onto three tanks would take approximately 45 minutes, since the Army Ranger radio operators were unfamiliar with the Marine PRC119. Once radio checks were performed, the tankers were ready to lead the convoy.

Around 1130 hours on 1 April, a convoy of three M1A1s and four Pandar SOF vehicles, 12 M1114s, and two Marine seven-ton trucks carrying soldiers from the 75th Ranger Regiment, departed for the northwest Saddam Canal Bridge near the intersections of Highways 7 and 16. Alpha Company from 1st Battalion, 2d Marine Regiment, was ready to assist the main effort as a quick reaction force (QRF) to avoid a repeat of the Mogadishu disaster or the aborted rescue attempt in Tehran.[19]

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Near simultaneously in the southwest portion of the city, the 15th Marine Expeditionary Unit (MEU) conducted a diversionary attack, along with Charlie Battery, 1st Battalion, 10th Marines, on the headquarters of Saddam's Ba'ath party. This massive eruption of firepower was used to deceive enemy fighters, causing them to think that an attack would occur along the western Euphrates Bridge, while the main effort maneuvered from the northwest. Marine and Air Force aircraft provided close air support (CAS) while UAVs circled above the hospital, providing real-time data back to the joint command center. Marine CH-46s ferrying a company of Army Rangers, Army CH-47s, and MH-6 Little Bird helicopters from the 160th Special Operations Aviation Regiment rushed to their target. After dropping their personnel, the Little Birds and Black Hawks stood ready to provide additional CAS and evacuate personnel.

A dozen Navy sea, air, and land (SEAL) sailors assaulted the six-story hospital, encountering limited resistance from Iraqi guards.[21] Using explosive charges to disorient any occupants, the SEALs moved quickly through the hospital and found the captured soldier.[22] Within a matter of minutes, the soldier was quickly loaded

"Armor is a force protection asset clearly feared by the insurgents. Tactically, tanks in sector signify a powerful deterrent and provide additional ground combat elements the freedom of maneuver they need to conduct missions."

onto the helicopter waiting on the rooftop and lifted into the sky.

As the aerial assault developed, vehicles from the ground combat element raced to their assigned positions, traveling at approximately 45 kilometers per hour. Three tanks immediately secured the southwest, southeast, and northeast corners of the Saddam Hussein complex. Gunners scanned assigned sectors of fire and even picked up their wingman's scan when thermal receiver units (TRUs) overheated. Loaders and tank commanders used night-vision goggles (PVS-7s and 14s) to scan for potential targets.

Once the perimeter was secured, SEALs and Rangers spread throughout the complex to search for more American soldiers. The hospital's staff informed the search team that several Americans had been buried on the hospital grounds.[23] As the intelligence was shared on the command net, Blue 2 identified large mounds of dirt and immediately relayed the information to the search team. The Marine tankers directed the Rangers to the location of what appeared to be freshly dug graves. The soldiers dug up the area using their hands and a large shovel given to them by Blue 2. Once their task was complete, SOF returned to their vehicles and aircraft, and the tanks pulled out in reverse order, escorting ground forces north of the Saddam Canal. The mission concluded just before daybreak, with the convoy returning safely across friendly lines.

That morning, seven Americans were uncovered and two more were found in the hospital's morgue. In the building's basement, SOF found rifles, ammunition, mortars, maps, and a detailed sandbox illustrating the exact locations of Iraqi defenses. There was clear evidence to suggest the building had been used to shield insurgents from American attacks.[24]

Armor is a force protection asset clearly feared by the insurgents. Tactically, tanks in sector signify a powerful deterrent and provide additional ground combat elements the freedom of maneuver they need to conduct missions. At the operational level, tanks are a reflection of serious combat power; their presence resonates across military lines, allowing human intelligence teams and civil affairs units to shape and stabilize areas of responsibility.

Personnel recovery is not a task normally assigned to a tank platoon.[25] However, tank, infantry, and air integration, especially in the joint environment, has improved and is continually evolving. These changes are built on doctrine and enhance each branch's capabilities. Regardless of the technological supremacy of the U.S. military, it is ultimately the disciplined, innovative, and flexible nature of its soldiers, sailors, airmen, and Marines that instills fear in the enemy.

Lessons Learned

The personnel recovery operation had the added benefit of lessons learned. When shared with comrades in arms, these lessons are invaluable, especially when they save lives.

Breaching obstacles in an urban environment:

Observation: A plow tank is an excellent piece of equipment to breach through obstacles and move vehicles.

Discussion: A plow tank moved vehicles into position as part of an obstacle plan to prevent insurgents from running through blockades. When conducting the personnel recovery mission, a plow tank was used to create a lane for SOF vehicles to travel through en route to Saddam Hussein Hospital.

Recommendation: In an urban environment, every tank platoon should have a minimum of one tank plow to emplace or breach obstacles.

Personnel recovery:

Observation: When conducting a PR mission, it is beneficial to carry equipment to potentially dig up the remains of soldiers.

Discussion: In An Nasiriyah, U.S. Army Rangers had to use their hands to dig up the remains of soldiers outside the Saddam Hussein Hospital.

Recommendation: When preparing for a PR mission, SOF should carry shovels in their vehicles or tankers should bring extra shovels since they have room to carry more equipment.

Scanning at night with defective thermal receiving units (TRU):

Observation: When a tank commander's TRU overheated, his wingman expanded his sector of fire while the tank commander's TRU cooled down.

Discussion: Loaders and tank commanders used their NVGs to provide additional observation. As expected, drivers also continued to use their enhanced night-vision sights to scan the tank's frontage. After continuous night operations, TRUs would eventually overheat and require a minimum of 5 minutes "cool down" time to once again receive a clear image.

Recommendation: Thermal receiving units should be inspected and tested prior to any type of night operation. Critical items, such as TRUs, should be readily available rather than waiting for a tank to be deadlined before the part is ordered. The supply system is not being circumvented to expedite delivery times; instead, having readily available critical fire system components, prevents cannibalization, and ultimately saves lives.

Notes

[1]Department of Defense, Chairman of the Joint Chiefs of Staff Instruction (CJCSI) 3270.01A, *Personnel Recovery Within the Department of Defense*, U.S. Government Printing Office (GPO), Washington, DC, 1 July 2003.

[2]U.S. Army Field Manual (FM) 3-50.1, *Army Personnel Recovery*, GPO, Washington DC, 25 September 1996.

[3]Richard S. Lowry, *Marines in the Garden of Eden: The True Story of Seven Bloody Days in Iraq*, Berkley Publishing, New York, 2006, p. 94.

[4]Ibid., p. 97.

[5]Ibid., p. 98.

[6]Rick Bragg, *I am a Soldier Too: The Jessica Lynch Story*, Knopf, New York, 2003, p. 9.

[7]Lowry, p. 88.

[8]Ibid., p. 107.

[9]Ibid., pp. 113-14.

[10]Bragg, p. 66.

[11]Lowry, p. 130.

[12]Bragg, p. 12.

[13]Lowry, pp. 391-93.

[14]"Leave No Comrades Behind," article available online at *http://gipsverband.free.fr/jlyncheg.htm*.

[15]Lowry, p. 371.

[16]Ibid., p. 374.

[17]Bragg, p. 129.

[18]"Leave No Comrades Behind."

[19]Lowry, p. 379.

[20]Ibid., p. 377.

[21]Ibid., pp. 378-80.

[22]"Leave No Comrades Behind."

[23]Lowry, p. 380.

[24]Bragg, pp. 133-34.

[25]Department of the Army, Army Training and Evaluation Program (ARTEP) 17-237-10, *Mission Training Plan for the Tank Platoon*, GPO, Washington DC, 25 September 1996.

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Retaking Sa'ad: Successful

by Major Niel Smith

Counterinsurgency is difficult. As a force, we have only begun to rediscover and process the hard lessons of the past, which we largely discarded in our march to build the perfect maneuver and combat force. As a result, the Army is struggling with "nonkinetic" operations — the Army's entire force structure is designed for kinetic operations, leaving commanders at all levels with few "nonkinetic" tools at their disposal.

During 2006, Team Battle, 2d Battalion, 37th (2-37) Armor successfully set conditions that resulted in pacifying insurgent-dominated territory without fighting any major pitched battles in Tal Afar. The soldiers of Team Battle applied principles learned from training, scholarship, and hard experience to achieve short-term, and hopefully long-term, success in one of Iraq's most difficult cities.

Counterinsurgency in Tal Afar

Following Operation Iraqi Freedom, the northwestern border and farming city of Tal Afar was a relatively peaceful and stable haven in Iraq. During 2004 and 2005, the city emerged as both a hub of insurgent infiltration from Syria to Mosul and as a refuge for insurgents fleeing the campaigns in Anbar province. The city was cleared during a major operation in November 2004 by 2d Squadron, 14th Cavalry Regiment, and again in September 2005 by the 3d Armored Cavalry Regiment (ACR) accompanied by the 3d Iraqi Army (IA) Division. The 3d ACR followed up on its success by establishing company- and platoon-sized U.S./IA outposts throughout the city to restore order and allow the reformation of civil government and security forces to rebuild. The conflict also included a bitter campaign by Sunni supremacists to exterminate the Shia presence in town, which had the effect of polarizing the populace along sectarian lines.

Our unit, Team Battle, 2-37 Armor, assumed responsibility for west and southwest Tal Afar on 14 February 2006. It consisted of a motorized tank platoon, a dual-purpose tank/motorized platoon, a mechanized infantry platoon, and a combat engineer platoon. The team's specific tasks included ensuring mobility on the alternate supply route (ASR) in its sector, developing IA and Iraqi Police (IP) capabilities, and defeating the insurgents' ability to operate in its area of operations (AO). Approximately half of the sector was occupied by friendly tribes, mostly Shia, who formed a partnership with coalition forces to protect their interests and restore a fair government to Tal Afar.

We were fortunate to take over from Fox Troop, 2d Squadron, 3d ACR; they had developed extraordinary relationships with the local populace and tribal sheiks in our sector. Fox Troop had also established U.S./IA platoon-sized patrol bases at strategic locations throughout its sector. By combining aggressive patrolling, engagement of local leaders, and development of human intelligence (HUMINT) from the local population, 3d ACR virtually eliminated insurgent control in the southern and extreme western parts of Tal Afar, and had began building inroads to the mixed tribal and sectarian neighborhoods of central and northern Tal Afar at the time of their relief in place.

As a new commander, I was faced with a number of opportunities and potential courses of action to build on Fox Troop's success. It appeared there were three possible directions to take. The first involved continuing efforts in the mixed Sunni/Shia central area, known as the Wahda neighborhood. Although Fox Troop had some measure of success in that area, there were limited options to improve the situation, other than increasing Iraqi Security Forces (ISF) presence. Additionally, the neighborhood was difficult to isolate and was bordered by insurgent support zones to the north and east. The neighborhood was almost fully occupied with a mixed population of 60 percent Sunni and 40 percent Shia, which resulted in a great deal of tension. Fox Troop managed to largely pacify the neighborhood and ISF managed to maintain the uneasy peace between the tribes and sects. Although the temptation to expand the "oil spot" was extremely tempting, focused effort in that area would not have lead to major gains elsewhere in sector.

The second option was to begin operations in the central portion of our sector, a heavily Sunni area known as Rubiyah, where

"Once we decided where to act, the question turned to strategy. First, we knew intelligence would be key to success and allow us to conduct targeted operations. With a neighborhood of displaced people, HUMINT would be critical to discerning AIF from intimidated civilians. We needed to disrupt the insurgents' ability to counter our initial actions by clearing the area prior to follow-on operations. Otherwise, we risked losing any initial toeholds into the neighborhood."

there was a strong insurgent cell focused on attacking the Iraqi police. One of the greatest advantages in this area was a local sheik who was willing to cooperate with coalition forces behind closed doors. However, intimidation was high and local support was not especially strong. Complicating the situation even further was the difficult task of isolating the area and limiting insurgent freedom of movement.

The third neighborhood was known as Sa'ad, a mostly empty battleground neighborhood that had seen extensive fighting over the past year. The neighbor houses were nearly two-thirds empty and the remaining residents were almost all Sunni, after the Shia residents had been displaced during the fighting. It was a known hotspot of insurgent activity and support. However, it was easily isolated, bordered the other two neighborhoods, and we could leverage existing tribes to remigrate into the neighborhood, if we provided adequate security. A plan to enter this neighborhood was not to be undertaken lightly; many coalition forces and ISF casualties had been taken. Additionally, there were few local informants or residents to co-opt.

Of the three options, we decided on Sa'ad because it possessed some unique characteristics that could be exploited. First, the neighborhood could easily be isolated using existing barriers and security forces, and the natural wadi system reinforced the obstacle plan.

Geographically, the neighborhood was triangular shaped and slightly less than a 1-kilometer square. The ASR bordered on the west; the main supply route, a major east-west city road, bordered on the south; and a deep, but passable, wadi system provided easy infiltration from the insurgent-dominated neighborhood of Quadisyah from the east.

A further analysis of the human terrain was also striking. The neighborhood was once almost evenly divided between Sunni and Shia families. The neighborhood originally began in the late 1980s as an upscale area for Baathist supporters and their families. During 2004 and 2005, insurgent and sectarian tensions caused all but a handful of Shia families to flee the neighborhood after an intense sectarian intimidation campaign. Many Sunni families fled to avoid being caught in the ensuing crossfire between insurgents, police, U.S. Army, and sectarian groups. By October 2005, the neighborhood was approximately 65 percent abandoned. These structures allowed freedom of movement, bed-down locations, meeting rooms, and cache storage for insurgents. The neighborhood also bordered ASR Santa Fe, the main logistics line to forward operating base (FOB) Sykes and an improvised explosive device (IED) hotspot.

The history of the area also affected the unit's mission. The 3d ACR patrolled the neighborhood regularly, but the density of empty houses occupied by an intimidated populace allowed the enemy to operate relatively freely in the area. Numerous armored vehicles were lost or damaged in the neighborhood and immediate vicinity due to large IEDs. Houses that may have been used as ISF outposts or by Shia supporters to meet with coalition forces were often destroyed using bags of urea nitrate fertilizer. The city's fledgling Iraqi police force refused to operate in the neighborhood due to the perceived strength of insurgent forces there. A lone Iraqi army patrol base occupied the area, but was largely ineffective at curbing insurgent operations in the area due to its small size and isolated location. One abortive attempt in late 2005 at establishing a second U.S./IA patrol base in the neighborhood resulted in a vehicle-borne IED (VBIED) attack, which was fortunately intercepted and detonated prematurely due to an alert Iraqi army soldier. Following the VBIED attack, the base was removed and the unit returned to regular patrolling in the neighborhood and prepared for relief in place with 2-37 Armor.

What really tipped the scale was the risks-and-benefits analysis of investing fully in each neighborhood. The analysis was conducted using three main criteria: the effect on insurgents if we succeeded/the effect on insurgents if we failed; suitability of the urban and cultural terrain; and the ability to execute with forces available. When applied against these standards, completing success in Wahda would consume too many resources without significantly affecting insurgents' ability to conduct operations elsewhere in sector.

Rubiyah's chances of success were assessed as low due to the lack of ability to rapidly "change" the cultural terrain, which was based on a populace that supported the anti-Iraqi forces (AIF) and the difficultly of controlling access in and out of the area.

Despite its status as the most dangerous area in our AO, Sa'ad was our best chance for success. First and foremost, insurgents would lose a major support zone, which would limit their ability to maneuver in the northwest part of the city, store tactical caches, and use bed-down locations. It would also remove the "support zone" for AIF operations in the Wahda neighborhood to the south, and limit the AIF's ability to destabilize that neighborhood. Finally, it would remove the IED threat from approximately a kilometer of our ASR, increasing the security of coalition forces and logistics convoys.

"We had little chance of winning popular support without becoming a constant part of the neighborhood. We also lacked sufficient combat power to permanently invest in the neighborhood and maintain security across the zone, which made handing off to ISF a necessity. This also supported the theater goal of enabling ISF to take the lead; however, the real problem was ensuring ISF was competent and capable of conducting local counterinsurgency operations."

Visualizing the Fight

Once we decided where to act, the question turned to strategy. First, we knew intelligence would be key to success and allow us to conduct targeted operations. With a neighborhood of displaced people, HUMINT would be critical to discerning AIF from intimidated civilians. We needed to disrupt the insurgents' ability to counter our initial actions by clearing the area prior to follow-on operations. Otherwise, we risked losing any initial toeholds into the neighborhood.

Following my first tour in Operation Iraqi Freedom (OIF), the emphasis became withdrawing to larger bases further removed from the population with the intent of taking away the "irritant" of coalition force presence. While well meaning, in practice, we abandoned many areas to insurgent patrols by failing to provide daily security before ISF were capable of standing up.

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"In coordination with our tactical HUMINT teams (THT), we slowly developed a more specific intelligence picture of the neighborhood, but still did not have the details required to begin operations effectively. To compensate, we increased patrolling in Sa'ad, attempting to elicit information from its residents. Despite great effort, it was apparent that the residents were unable or unwilling to cooperate with us due to terrorist domination of the area."

enabling ISF to take the lead; however, the real problem was ensuring ISF was competent and capable of conducting local counterinsurgency operations. The Iraqi army was largely tasked out maintaining their existing operational set, given their liberal leave policy. Fortunately, the city was in the process of receiving over 1,500 new Iraqi police officers who were trained at the Jordanian police academy. Once established, they would be the focus of our main security force, since they were drawn from the local community and some were displaced residents of Sa'ad. Our task would be to ensure they were well prepared and equipped for the task at hand.

Finally, we realized that the ultimate goal and arbiter of long-term stability in the sector would be the return of displaced families. Besides being a humanitarian and positive information operations goal, the remigration of friendly families under an umbrella of joint security would prevent terrorists from using neighborhoods to support their purposes. To do this, we had to leverage relationships established with local tribes.

After considering the above, we settled on the following campaign strategy:

- Phase I included recruiting and developing local informants from the displaced populace to provide an accurate picture of AIF supporters, safe houses, and cache locations.
- Phase II consisted of a cordon and search of the neighborhood to locate insurgents and disrupt insurgent logistics in the neighborhood.
- Phase III established a platoon-sized U.S. patrol base in the sector to provide continuous presence and security to the populace.
- Phase IV consisted of establishing an Iraqi police station and transitioning daily security to ISF.
- Phase V was to convince the tribes representing displaced families and civilians to return to their old neighborhoods under the new security umbrella.

Phase I: Building the Picture

Developing our intelligence picture was the first major hurdle. This usually difficult task was made easier for us by our predecessor unit. We were fortunate to inherit a large network of informants and contacts developed by 3d ACR during their operations. Despite this, we lacked a cohesive current intelligence picture of the threat facing us in the Sa'ad neighborhood. In fact, we knew very little about the insurgents in that area. We were also reluctant to rush into a dangerous area until we felt comfortable operating in our sector — the unit's first and last 30 days in Iraq are the most dangerous. We implemented an aggressive reconnaissance and surveillance plan to learn the neighborhood while conducting patrols throughout the AO.

Using established relationships from Fox Troop, we spread the word that we were seeking knowledgeable individuals who knew the Sa'ad neighborhood and its resident insurgents. To directly reach the people, we identified areas where displaced Sa'ad residents resided and spread the word during dismounted patrols that we were seeking information to drive out the insurgency. In coordination with our tactical HUMINT teams (THT), we slowly developed a more specific intelligence picture of the neighborhood, but still did not have the details required to begin operations effectively. To compensate, we increased patrolling in Sa'ad, attempting to elicit information from its residents. Despite great effort, it was apparent that the residents were unable or unwilling to cooperate with us due to terrorist domination of the area.

A breakthrough success occurred when a new informant contact was introduced through a friend. He heard we were seeking to clear the neighborhood and represented a loose coalition of 20 displaced families. The informant produced a spectacular hand-drawn map of the neighborhood, identifying each house. Annotated in Arabic were the locations of known AIF supporters, possible cache locations, and friendly residents. We were excited to get this information, but wary of its details, especially from a first-time informant. In conjunction with our other informants and the S2 shop, we were able to substantially confirm the information's validity.

With information in hand, we began to set the tactical conditions by reinforcing an obstacle plan set by 3d ACR in the neighborhood. We reinforced existing obstacles and blocked all exit routes from the neighborhood, with the exception of one, which was manned by an Iraqi army checkpoint. This operation forced all vehicles to be searched before they entered or exited the neighborhood. Isolating the neighborhood allowed us to better cordon the area and at least restrict infiltration of more weapons to the neighborhood.

Phase II: Cordon and Search

There is some argument in the military community over the applicability and usefulness of large scale "cordon and search" or "cordon and knock" techniques. However, we found that when properly executed, they are useful tools during counterinsurgency operations when combined with intelligence, a clear task and purpose, and targeted information operations. We envisioned an initial cordon and search as an enabler that would allow us to potentially trap known terrorists inside the neighborhood and flesh out existing caches. The disruptive effect would provide us the opportunity to establish our operations base inside the neighborhood.

Having an intelligence picture provided us with the ability to plan a detailed cordon and search of more than 200 houses. We integrated with 1st Battalion, 2d Iraqi Army Brigade, 3d Division to execute the operation. The battalion's acting commander planned the operation in strict secrecy, in conjunction with Battle Company, beginning two weeks from execution. We decided to conduct the operation on a Friday to catch as many people at home as possible and selected 10 March as our target date.

The plan was relatively straightforward. Three U.S. platoons, integrated with three IA companies, would establish a cordon at 0630 hours around the neighborhood to prevent possible escapes. Once established, two IA companies, accompanied by one of our infantry platoons, would conduct a deliberate block-by-block clearance of all houses. All males between ages 13 and 70 would be directed to report to the centrally located primary school, which would serve as the command post for the operation. Having the males report to the school served two purposes: it prevented terrorists from maneuvering inside our cordon; and alerted search teams to regard any male found in a house, on the streets, or hiding as suspect after the cordon was in place.

One of our tank platoons and the company trains were assigned to secure and operate the screening process. A carefully selected panel of informants, in conjunction with our "blacklist," would identify insurgents and their supporters for further questioning by a mobile interrogation team (MIT), which was on site to gain actionable intelligence. Those not identified as insurgents would be given the opportunity to speak with a THT.

Tactical psychological operations (PSYOPS) teams would provide initial broadcast messages and later help distribute information operations (IO) messages to screened personnel for effects mitigation. An explosive ordnance detachment and military working dog team would assist in detecting and reducing any ordnance found. Finally, aviation would provide support and observation during the cordon and search process, especially in the critical early phase. We planned to screen 200 to 300 males, based on our population estimate in the neighborhood.

A detailed combined arms rehearsal was secretly conducted in an empty warehouse at our joint U.S./IA company base. Each participating element and IA commander rehearsed their roles in the mission, which later proved invaluable during the critical cordon establishment phase. Having had coordination difficulties in prior operations with our IA counterparts, the detailed rehearsal proved vital in ensuring IA leaders understood their roles in the plan.

The raid was executed as planned at 0630 hours on 10 March. Tactical surprise was achieved as the cordon was emplaced, effectively sealing the neighborhood. The search forces deployed while the school was being set up as a processing center. Our infantry platoon and the IA companies began their search in conjunction with the tactical PSYOPS team's broadcasts. By the end of the search, more than 500 males had been processed, which nearly doubled our estimate. Screening and processing the males took more than 8 hours at the school and we kept the cordon in place the entire time. As it turned out, we severely underestimated the number of residents and the time it would take to process them. An IED cache and a 500-pound unexploded joint direct-attack munition (JDAM) were discovered during the operation. Although we learned many lessons for future cordon and search procedures, the basic template used during this operation was the foundation used for operations elsewhere in the city.

A grand total of 63 detainees were identified for further investigation regarding insurgent activity. We subdivided the group into three categories: AIF leaders, AIF soldiers, and common criminals. The leaders were taken into immediate U.S. custody, the soldiers into IA custody, and the criminals were handed over to the police. The breakdown was 11 into U.S. custody, 20 into IA custody, and 32 into police custody. Statements were immediately solicited from the detainees.

Following the operation, we circulated names and photos of the detainees to ISF, who provided witness statements regarding the detainees. Almost one-half of the detainees, including 9 of the 11 U.S. detainees, were sent to prison for eventual trial by Iraqi authorities. Among the detainees were alleged financiers, IED manufacturers, and direct-action cell leaders.

The operation achieved its intended purpose — disrupting insurgents operating in the neighborhood. The time provided by this operation would allow us to occupy a patrol base in the neighborhood. There was not an enemy-generated significant event in the neighborhood for the next 7 days.

Phase III: Building the Patrol Base

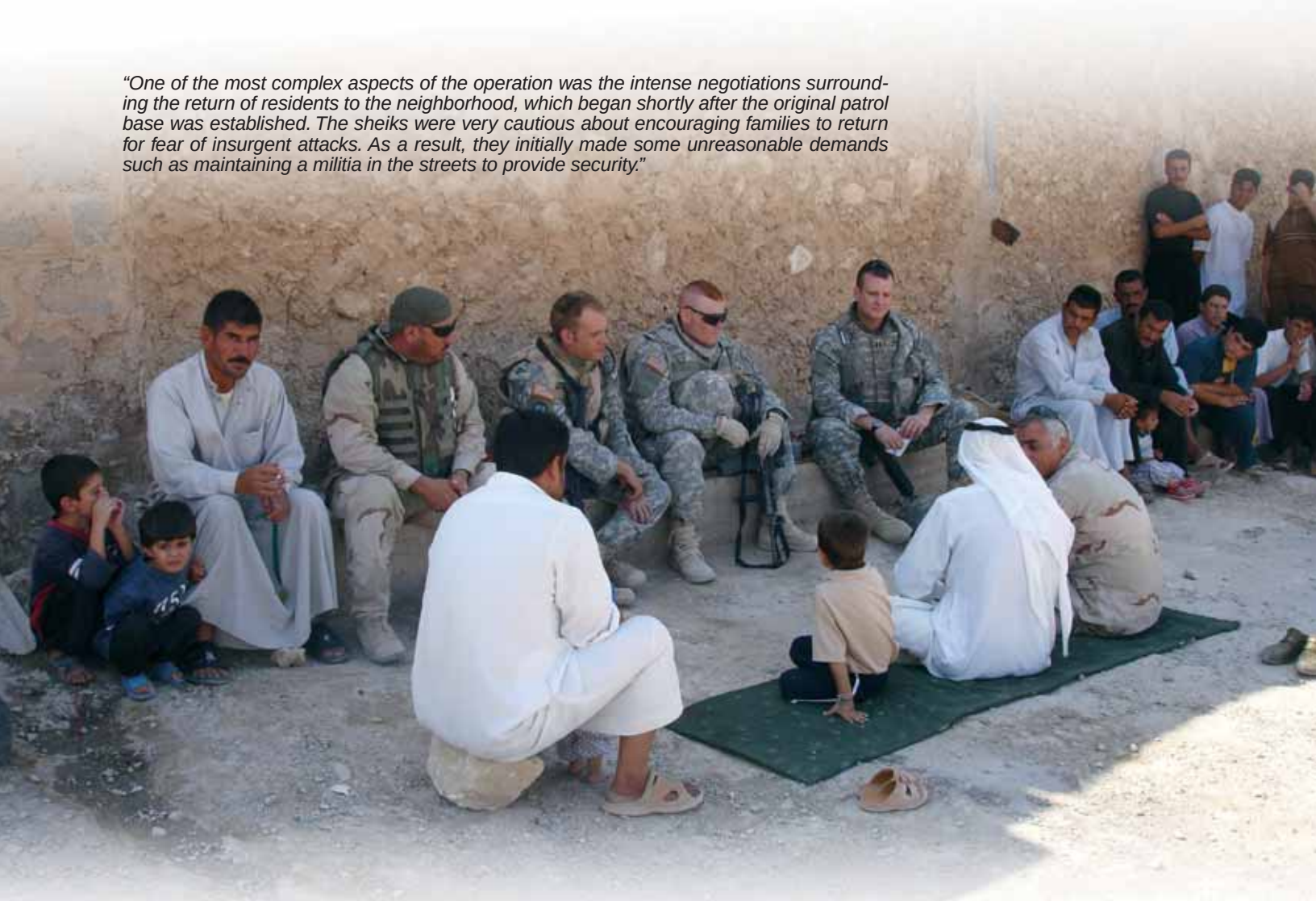
With the insurgent leadership and direct-action cells disrupted in the Sa'ad neighborhood, we had a small window of opportunity during which to establish our patrol base. A patrol base established in the heart of the neighborhood would allow constant patrols and limit insurgent freedom of movement. It was also a visible demonstration of our commitment to win over insurgents and provide security in the neighborhood.

On 14 March, we established Patrol Base "Battle Dwarf" (because of its small size), which was occupied by our infantry platoon. Located in the most dangerous section of the neighborhood, we emplaced barriers along three sides of the patrol base and a wire/spike-strip combo to protect against VBIED attacks such as the one Fox Troop endured. We reinforced our building's windows and roof with sandbags. Kevlar blankets were draped against the windows to guard against shrapnel from mortar attacks or VBIEDs. A platoon quick-reaction force (QRF) was maintained and on standby for quick response to any attack. We rehearsed multiple routes and alternate entry locations to reinforce the base, attempting to avoid "first responder" attacks.

The platoon primarily conducted dismounted operations from the patrol base at random intervals. The patrols conducted thorough searches of empty houses, drank chai (tea) with locals, and distributed the IO message that we were there to stay and to remove insurgent forces. In the first 3 days, major weapons and IED caches were found, including Motorola radios, homemade rocket-propelled grenades, and plastic explosives.

On 18 March, the enemy struck for the first time. A dismounted patrol had just returned and noted that there was no one present on the streets. Several adjacent houses and a small store had closed down midday. Our S2 also reported that an attack was underway somewhere in the city. This information led to an increased awareness and alerted the guards at the patrol base.

Suddenly, the roof guards indicated that some children, who usually played along the protective wire on the mounted avenue of approach, pulled back two strands of concertina to create a small opening in the wire. Immediately, a small car drove at high speed through the hole and across the protective spike strip emplaced about 70 meters from the patrol base, which failed to stop the car. The car was immediately engaged from the rooftop with M240B machine gun fire. The car hugged the extreme side of the near wall as it approached, allowing the rooftop gunner to engage only the passenger side. The soldiers on guard called for everyone to take immediate cover. As they did, the VBIED rolled



"One of the most complex aspects of the operation was the intense negotiations surrounding the return of residents to the neighborhood, which began shortly after the original patrol base was established. The sheiks were very cautious about encouraging families to return for fear of insurgent attacks. As a result, they initially made some unreasonable demands such as maintaining a militia in the streets to provide security."

to a stop near the front door of the base and after a 2 to 3 second pause, detonated. The blast collapsed the outer wall and shattered every window on the block.

Thankfully, all the carefully emplaced force-protection measures held. The Kevlar blankets draped over the windows stopped the shrapnel, and the sandbags and concrete construction protected the soldiers from the explosion. Due to the alert guards, everyone was able to seek some measure of protective cover. Pieces of the car were found more than 100 meters from the point of detonation.

The company QRF responded to the event, as rehearsed, within 5 minutes, and assisted in establishing a perimeter around the site. The remainder of the company quickly followed and nearby units from Company A, 2-37 Armor responded immediately. The IA and IP closed all checkpoints into the area to prevent a possible secondary attack on the responding elements. Post-blast analysis indicated that the explosive was a combination of military rounds and homemade explosives.

No one was killed in the explosion, but four soldiers received minor wounds. We immediately began reconsolidating the gear and equipment inside. After consulting with the battalion commander, we decided to immediately re-establish a new base to reinforce the message that we would not be deterred. The new base would be manned by our engineer platoon while the infantry reorganized from the blast and took a break. Prior to establishing Battle Dwarf, we had explored several houses as potential base locations and chose one of these as our new base, which was located about a block from the VBIED site and provided a commanding view of the area. The battalion headquarters company brought an emergency class IV push, and reinforcements from A Company, 2-37 Armor provided initial security during the establishment of our new base, aptly named "Battle Phoenix."

The enemy did not expect us to re-establish so quickly. They likely anticipated that we would withdraw from the area, as their attack in December had achieved. Patrols immediately resumed, and they located caches and IEDs almost daily. A HUMINT tip led to a suspected IED on 21 March, and as it was being explored, it detonated and caused minor injury to one soldier and destroyed a multifunctional agile remote-controlled robot (MARCBOT).

On 25 March, our infantry platoon was conducting a routine patrol when a homemade IED exploded against a dismounted patrol, causing minor injuries to a soldier's hand. In this case, the patrol identified the triggermen and chased them as they fled across the wadi to the east. The IA apprehended the individuals and turned them over to our patrol. One of the two individuals was a battalion target and an IED cell organizer. Their detention resulted in a quiet phase in the neighborhood and we continued to expand patrol frequency and duration, resulting in the discovery of several caches. Other significant finds included a cell member who later provided critical information leading to the detention of other high-value targets.

On 6 and 7 April, the base received 60mm fire from a mortar team in response to the arrival of IP to our patrol base. On 8 April, a patrol was sent to establish an ambush on the likely point of origin (POO). A buried 120mm mortar, with homemade explosives, exploded against a dismounted patrol that was sent to investigate the POO, killing one soldier and severely wounding another.

The enemy patterned us and used our tactics, techniques, and procedures (TTP) against us. Another IED attack, against an

M113 sent to investigate a possible IED, wounded one of our soldiers. We did not let these tragic events deter us from the objective; however, we evaluated and shifted our tactics to better employ IED countermeasures, reduce predictability, and increase ISF cooperation.

At this stage, we began to notice subtle changes in the neighborhood. People were becoming friendlier and more receptive, although HUMINT tips were not increasing. Our company leaders determined that we had reached our limit with U.S.-only forces and more ISF were needed to move the project forward from its current tense stalemate, which was consuming one-third of the company's combat power that was beginning to be needed elsewhere in sector.

Phase IV: Transition and Partnership with Iraqi Security Forces

After nearly a month of operations, we were setting the conditions for the IP to re-enter the neighborhood. When we began operations, the city was still receiving, equipping, and integrating new police. Additionally, they had very few officers and experienced police; however, by mid-April, enough police had arrived to establish operations in Sa'ad under our supervision and support. The city police chief arranged for an initial force of 50 IP to conduct joint operations. We established a police outpost on 4 April, which was collocated with Battle Phoenix. The local police station chief ensured his most experienced and aggressive police officers occupied the base, even replacing those who failed to perform to standard. They soon began combined patrols with U.S. forces several times a day.

Given the largely Sunni neighborhood and mostly Shiite police force, there existed a large possibility for sectarian tension, revenge attacks, or further violence. We were extremely fortunate to work with someone of the caliber of the local police chief. He deftly walked the tightrope of being firm, but fair, with the residents, and disciplined the police if they operated inappropriately. He was a local from the neighborhood and was well respected in the community. More importantly, he sincerely cared about bringing security to Tal Afar and wanted his neighborhood families to return to their homes.

Over a two-week period, we shifted from U.S.-led and -dominated patrols to independent IP patrols. We noticed residents becoming more positive and we soon began receiving tips and intelligence from them. Initially wary, the locals soon warmed and later embraced the new IP presence once it was established that they were not a sectarian hit squad. We once again saw progress in the neighborhood after stalling in early April.

The police chief was so enthused by the success in Sa'ad that he moved his police headquarters into the neighborhood. He requested we place a triple-strand concertina barrier across the eastern wadi to canalize AIF movement to the north or south, where he would establish IP checkpoints. We resourced the wire and emplaced it as a joint operation with the IA and IP to build cooperation between the forces. Although we initially doubted the effect of the barrier, we were pleasantly surprised when the locals reacted positively to the wire and insurgent activity dropped measurably.

On 22 April, we began transitioning Battle Phoenix to the IP following two weeks of joint train-up. The IP continued constant mounted and dismounted operations around the area while we supported daily from Combat Observation Post (COP) Battle. Their independent operations resulted in many additional cache finds and a few detentions, but most importantly, we had achieved a major goal — transitioning primary responsibility to ISF while supported by U.S. forces. This had major positive effects in the community and among the local police forces. The only remaining challenge was to convince the displaced populace to return home.

Phase V: Returning Displaced Civilians

One of the most complex aspects of the operation was the intense negotiations surrounding the return of residents to the neighborhood, which began shortly after the original patrol base was established. The sheiks were very cautious about encouraging families to return for fear of insurgent attacks. As a result, they initially made some unreasonable demands such as maintaining a militia in the streets to provide security.

Convincing local sheiks that the area was safe was no small undertaking. In Iraq, perception is reality and the locals heard about casualties and car bombs, but not about the enemy fleeing the area in response to our operations and that ISF were controlling the neighborhood. This was another one of those areas in which the local chief of police played an invaluable role. Since he was a local resident and related to several powerful local personalities, his assistance was critical in gaining support from the tribes. He did so at considerable risk to his own prestige; if the

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endeavor failed, his position in the community would be reduced and his job imperiled.

After some intense negotiations between security forces, the city mayor, and the sheiks, an agreement was reached. The persuasive arguments by the police chief and mayor won the day. Only males would return to a limited portion of the neighborhood in the beginning to "test the waters." The IA, IP, and U.S. forces would provide route security to the neighborhood (a concern for residents), and the residents were allowed to keep AK-47s in their homes to protect themselves. If the neighborhood was as secure as they were told, they would return more people and families.

Our first attempt at moving in individuals on 18 April was a failure. The males that returned brandished their weapons in the streets and caused some trouble with local residents. A severe sandstorm and IED reduced the number of forces we were able to provide. The sheiks, angered by a perceived lack of support and under pressure about the weapons incidents, withdrew from the area.

Negotiations over returning the residents soon began again and after some delays and mediation, a more detailed and specific agreement was reached. Heavy security would be provided by U.S. and ISF forces units for the first 48 hours, and in return, the returning residents agreed not to brandish weapons or cause any trouble with existing residents. The chief of police proved critical to reassuring the Iraqis about providing enough security from ISF.

On 27 April, approximately 50 males returned to the southwest portion of the neighborhood under heavy U.S. and ISF security, including aviation. Eager to avoid a repeat of the attempt nearly 10 days earlier, I collocated with the main Shia Sheik at the site to immediately resolve any problems. Fortunately, the entire move took place without incident. During the initial two weeks, we maintained constant vigilance in the neighborhood, especially cautious about sectarian violence or retribution between the returned residents.

Continuing Stability

Maintaining our success was as big a challenge as achieving it. Securing the neighborhood required daily attention from the unit. In mid-June, we felt security conditions were permissive enough to conduct a town hall meeting, with leaders from the neighborhood, to elect a muktar (mayor) and address any grievances that local leaders may have. We conducted our first meeting on 20 June with great success.

Fortunately, none of our fears came to pass. AIF activity remained minimal to nonexistent in the neighborhood. As word spread, families arrived daily, with some returnees traveling over 150 kilometers to reoccupy their homes. The ISF maintained a constant presence and manned checkpoints in the neighborhood. U.S. forces maintained almost daily joint patrols in the area, but refocused on developing the logistics and administrative skills of the IP and IA bases. The ongoing security of Sa'ad now rests almost entirely in Iraqi hands with U.S. forces providing "overwatch."

The operation had great second- and third-order effects in the Wahda and Rubiyah neighborhoods. Removing the insurgent base in Sa'ad denied insurgents easy entry into Wahda. In Rubiyah, residents petitioned for a police base similar to the one in Sa'ad. Our unit and the local police were happy to comply and the program was expanded in other company sectors.

"To win in counterinsurgency, the local population must execute the long-term answer; our role is to set conditions that allow Iraqis to independently succeed. In Sa'ad, we set conditions for the return of ISF, who were fearful of operating in a dangerous neighborhood, which, in turn, set conditions for the return of displaced residents. The continued peace in the neighborhood is a testament to what ISF can do when U.S. forces serve in a committed support role."

Strategically, the operation became well known throughout Tal Afar and the reputation of the local IP and IA were enhanced by its success. We began focused civil-military operations (CMO) projects to support returning residents, which included "start up money" to repair homes damaged by heavy fighting over the past year. We paid nearly $15,000 in claims to assist the families courageous enough to return.

Currently, employment projects are underway with the support of the muktar and the ISF to provide an economic base for residents, including a water well, school refurbishment, and street lighting. Despite this progress, gaining reconstruction dollars is a slow and bureaucratic process, and often the expectation of the Iraqis cannot be met by U.S. forces under the current funding model.

Lessons Learned

Like most successful operations, a clear commander's intent was vital to our success. When the intent is practical and clear, soldiers can tailor their actions to achieve the mission. Likewise, a clear vision in the commander's mind of what he expects the endstate to be assists in evaluating and processing variations and changes to the tactics while maintaining the overall strategic focus.

The presence of force in neighborhoods and communities is fundamental to a successful counterinsurgency. By living among the people and learning their way of life, we gained credibility and demonstrated resolve to stay and solve problems. The enemy expended great effort to expel us from the neighborhood because we were a threat to their operational base. Once the terrorists and residents realized we were not leaving, we gained the confidence of the people, who trusted we could protect them from the terrorists. Eventually, we transferred that confidence to their local police force, which was a huge change. If we had not established bases inside the neighborhoods, we could not have achieved as much as we did.

Living in the city requires careful assessment of how to protect soldiers against the threat. As demonstrated by patrol base Battle Dwarf, force protection can be underestimated and the enemy will analyze and target your weaknesses. The structure of urban neighborhoods and houses make it nearly impossible to guard against every threat — from a thrown hand grenade a few houses over to a suicide VBIED attack. Operating inside a neighborhood assumes some soldier risk in the short term for long-term security. When casualties began to mount, I doubted the wisdom of the strategy. Perhaps sensing my unease, a young infantry soldier told me: "Sir, if we weren't in the neighborhood, we'd just be getting blown up more outside it." His comment unwittingly framed the issue perfectly.

There are key measures ground commanders can take to minimize risks and casualties. Commanders must understand and employ their IED countermeasure systems properly. These systems must be strategically placed in all patrols — planned and deliberately placed much like a crew-served weapon. We also learned that a .50-caliber machine gun is required at all entry control point (ECP) locations or potential VBIED sites. Barriers and other obstacles must be reinforced; local residents must be briefed and warned of the potentially lethal consequences of tampering with defensive obstacles. Children must be ruthlessly kept away from all ECPs and guard points. Finally, dismounted patrols and mounted patrols must vary routes, times, and movement methods such as wall-hopping, bounding teams, and rooftop jumping.

The ISF was key to our operational success. Understanding the capabilities and limitations of the Iraqi forces in your area is vital. Iraqi army forces in our sector were great for operations but weak in daily counterinsurgency. Iraqi police were highly effective in the daily fight, but due to discipline and equipment problems, were incapable of undertaking large operations. Joint patrols and training at all levels reinforce their legitimacy and ensure their balance regardless of sectarian orientations. Taking ISF key leaders to bilateral meetings (BILATs) and developing direct relationships with local leaders resulted in major atmospherics improvement in our area. Some Iraqi army leaders are not accustomed to "answering to" or "working with" civilians. Direct contact between local sheiks and Iraqi leaders eliminated potential sectarian differences and resolved issues much more effectively than playing the "middle man," which allowed both sides to scapegoat U.S. forces and avoid accountability. Sometimes compromise with Iraqi leaders may be necessary to accomplish the objective — even using methods you may not agree with. Keep in mind that the Iraqis have to live with the result; allowing the Iraqis to "design the solution" creates ownership and facilitates success.

To win in counterinsurgency, the local population must execute the long-term answer; our role is to set conditions that allow Iraqis to independently succeed. In Sa'ad, we set conditions for the return of ISF, who were fearful of operating in a dangerous neighborhood, which, in turn, set conditions for the return of displaced residents. The continued peace in the neighborhood is a testament to what ISF can do when U.S. forces serve in a committed support role.

Finally, economic prosperity is the motivator for maintaining success in a counterinsurgency environment. A competent and targeted CMO effort to reward those who took risks and gave information helps win the fight. To paraphrase, dollars are the same as bullets in counterinsurgency, but are often extremely difficult to get quickly. A colleague summarized it well, "I have almost unlimited capacity to employ violence, but little ability to employ nonviolence." Gaining nonkinetic economic support remains the biggest challenge to commanders throughout Iraq, and will continue to be a major issue until there is an improved process that empowers front-line commanders to employ dollars as easily as they employ bullets.

The Sa'ad neighborhood campaign was an ambitious attempt to re-take ground held by the enemy. The success of the operation required us to "break the FOB" mentality and live among the people. Respectable locals will unhesitatingly support U.S. and ISF forces, if they are provided security. It is correct to say that Tal Afar had a unique set of circumstances that assisted in our unit's success. Deployed units can help themselves by assessing ethnic and tribal histories and dynamics to shape a strategy for success. I hope commanders and planners can apply the principles we learned at a heavy cost in Tal Afar to protect other areas from insurgent control.

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So You Want to Train An Iraqi Mechanized Brigade?

by Major William T. Nuckols Jr.

U.S. Army military transition teams (MiTTs) are preparing and training Iraqi army (IA) units for combat. MiTTs advise Iraqi forces in the areas of intelligence, communications, fire support, logistics, and infantry tactics. Once trained, Iraqi forces will be self-sustainable tactically, operationally, and logistically, which will enable them to take responsibility for their battlespace. The MiTTs are trained to conquer obstacles, such as foreign language barriers, radically different cultures, lack of resources and doctrine, 40-year-old equipment, and the occasional mortar attack. These obstacles can be overwhelming; however, MiTTs reach varying degrees of success in Iraq every day. This article illustrates how one MiTT team planned to handle these daunting challenges.

Background

Our team was assigned to the 3d Brigade, 9th (3/9) Iraqi Army Division in Taji, Iraq. The 9th Division is the only mechanized division in the Iraqi army. The division is well established and is currently conducting combat operations in Baghdad with elements of the 1st and 2d Brigades. The 3d Brigade had just implemented force generation when our team graduated from the Phoenix Academy in November 2006.

The 3d Brigade consists of one T-55 tank battalion and two BMP-1 mechanized infantry battalions, with the standard headquarters and headquarters company, scout platoon, and three line companies in each battalion. The brigade did not have any intelligence, surveillance, and reconnaissance (ISR) capability assigned to its modification table of organization and equipment (MTOE). This deficiency was corrected by taking a small number of scouts, up-armored gun trucks (M1114s), snipers, and motorcycles from each battalion to create a brigade ISR platoon. This is very similar to what the U.S. Army did a few years ago when it reduced the size of battalion scout platoons to create the brigade reconnaissance troop (BRT).

Each mechanized infantry battalion is equipped with 44 BMP-1s, which were purchased through foreign military sales. The first delivery of BMP-1s from Greece had been "re-conditioned" with a contract from the Iraqi Ministry of Defense (MOD). Somewhere along the way, the definition of "re-conditioned" must have been misunderstood; basically, the brigade received newly painted, well used and worn BMP-1s. Just to give an indication of their serviceability, out of the first batch of 64, 28 of them had bad engines.

The tank battalion consists of 35 T-55 tanks scavenged from the scrap piles of Saddam's army. They were also re-conditioned, but in slightly better condition. MOD has a contract with the national tracked maintenance depot at Taji to conduct repairs and overhaul tracked vehicles. Fortunately for us, the supervisor of this facility is a crusty old retired tank master gunner who knows his business. While they certainly were not new, they are all serviceable.

The soldiers of the brigade are like any soldiers the world over. If properly trained, equipped, and led, they are capable of doing great things. However, the focus of the article is on how a training plan was crafted for the brigade, so it does not focus on the myriad challenges faced in the areas of basic life support and supplies.

The Mission

Brigade leaders had 3 months to prepare the brigade for counterinsurgency combat operations. Therefore, life support and logistics challenges aside, the MiTTs and their IA counterparts had to develop a plan with limited resources as quickly as possible. The MiTT worked hand in hand with the brigade S3 and brigade commander during this effort. The brigade commander was a dedicated, patriotic, and professional military officer — as the former 9th Division G3 for training, he took the subject of training his brigade very seriously.

Most of the tank crewmen had graduated from a 3-week "armor school," which was taught at Taji. It focused on the very basics of driving a tank, shooting the main gun, and using the old Soviet model high-frequency (HF) radios. There was little hands-on training conducted at the school — soldiers did not fire live rounds and only drove the tanks approximately 200 meters. Except for senior officers at battalion and brigade levels, there were no seasoned tankers to mentor new soldiers. Regarding mechanized battalions, there was no established mechanized infantry training course for the Iraqi army.

The MiTT realized it would be necessary to begin training the very basics and build from there. It also acknowledged that the tankers would need to train on basic infantry tasks and drills. In addition, every IA soldier was paid monthly in cash and took at least one full week of leave every month to deliver his pay to his family.

The Challenge

In a nutshell, the MiTT's challenge was to get a brigade full of privates, with a sprinkling of experienced officers, from individual training through crew collective training, gunnery, platoon-level training, and a company-level exercise, as well as some multiechelon battalion- and brigade-level training, within 9 weeks.

Partnership Concept

To help accomplish this mission, we were fortunate to have a U.S. brigade commander and brigade combat team (BCT) that stepped up and made it happen. After training, the plan required our IA brigade to occupy the battlespace controlled by 1st Brigade, 1st Cavalry Division. Our IA brigade was tactical control (TACON) to 2d Battalion, 8th (2-8) Cavalry, and conducted joint operations at platoon and company levels. Understanding the importance of getting the IA in the lead, 2-8 Cavalry viewed this relationship more as a partnership and invested heavily into the training plan. The commander of 1st Squadron, 1st Cavalry, immediately bought into the concept and provided much-needed professional soldiers from his brigade to make this concept a reality.

The 2-8 Cavalry partnered one U.S. Army company with each Iraqi battalion for training and validation. That company would conduct joint combat operations once training was complete. The U.S. Army company immediately felt it had a vested interested in its IA battalion and in the quality of training being conducted. In other words, the MiTT was supported through partnership relationships rather than the more commonly used practice of "augmentation."

Each battalion was training sequentially with the tank battalion in the lead, followed by 1st Mechanized Battalion. The 2d Mechanized Battalion was further behind in fielding personnel and equipment. This arrangement enabled 2-8 Cavalry to conduct combat operations while simultaneously supporting 3/9 IA.

In the short term, this loss of combat power severely stretched the resources of 2-8 Cavalry; however, it paid huge benefits in the area of operations once training was complete and the IA battalions occupied battlespace alongside the soldiers of 2-8 Cavalry. Although painful up front, the wisdom of this arrangement is inarguable.

The Training Plan

The training plan was developed using the tenets of U.S. Army Field Manual (FM) 7-0, *Training the Force*, and lessons I learned while serving as the S3, 4th Squadron, 7th Cavalry, in Korea.[1] It is particularly important in the Arabic culture to conduct repetitive hands-on training. Classroom training must be avoided whenever possible.

The scout platoons were not included in our overall training plan; however, thanks to the 2d Mechanized Battalion MiTT Chief, our team was able to leverage an existing training asset in the form of the Macedonian Special Forces (MSF) to assist with this effort. The 2d Mechanized Battalion had spent most of their tour training a local special troops company (STC) and had a good working relationship with the MSF. Since the 2d Mechanized Battalion would not be training for several weeks, they were tasked with training the brigade's scout platoons and

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"One of the properties was a large compound that had been used for storing rockets. It was extensively bombed during the invasion and consisted of two large derelict hangar-type buildings, dirt roads, and smaller bermed areas where rockets were stored. With the exception of the two destroyed hangars (for more of an urban setting), it was an excellent area for tank driver training and a dry fire TCPC range."

used the same training model used very successfully with the STC.

The brigade training plan also had to include all of the other low-density military occupational specialties and specialty platoons, which obviously was a resource challenge. In every area, U.S. trainers had to understand not only the basic principles of what they would train, in which they were well versed, but also the Iraqi army system and all technical aspects of the equipment on which they were training. Therefore, we had to "train the trainers."

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The brigade training plan was divided into three distinct week-long phases with 1 week of leave between each phase. Phase one focused on individual skills; phase two focused on crew collective skills and gunnery; and phase three focused on platoon- and company-level training with a refresher on small arms (repetition):

Phase-one training. This training phase consisted of 4 blocks of 5 training days and included:

- Rifle marksmanship/infantry skills/communications included zeroing, qualification, reflexive firing, rules of engagement, escalation of force, urban patrolling, and basic communications using the handheld and base station Motorola radios, which were issued to most IA units.
- Tank crew proficiency course (TCPC)/maintenance included driver's training, snake board drills, crew chair drills, tank crew drills, and tank maintenance.
- Tank crew skills training was very similar to our tank crew gunnery skills test (TCGST) and included boresighting the T-55, DiSHKA machine gun training, preparing the gunner's station, preparing the loader's station, preparing the driver's station, loading the 100mm main gun, and mounting the DiSHKA machine gun.
- Combat lifesaver training was modeled after our week-long training event.

Phase-two training. This phase was conducted at Besmiyah (Butler) Range, which is a modern multipurpose range complex located east of Baghdad. Training events focused on small arms and tank gunnery and consisted of the following 5-day training blocks:

- Tank driver training/convoy operations.
- Small arms training, including sustainment training with AK-47s and training on the PKC machine gun.
- Tank tables IV through VIII, which were similar to our tank tables with fewer targets and more emphasis on machine gun engagements.

Phase-three training. This phase included 2 weeks of platoon collective training, which consisted of TCP operations, "snap" TCP operations, and convoy operations. Phase three culminated with a 3-day mission rehearsal exercise (MRX) with battalion and brigade multiechelon involvement.

Prior to the start of the MRX, the brigade and battalion staff conducted a military decisionmaking process (MDMP) exercise, which focused on a notional operation in Taji. The battalion staff had command and control (C2) of the operation, requiring each company to conduct multiple platoon missions. Key tasks for the staffs included reporting and battle tracking. For example, 1st Company was required to establish a 4-hour platoon TCP while another platoon conducted a patrol. Intelligence determined how and where the battalion commander would use his scout platoon to help shape the fight and develop the overall picture. He was also introduced to the concept of task organizing for specific missions.

Most of the training was conducted on local "training" areas in East Taji. In reality, with the exception of three small-arms ranges, there were no official training areas in Taji, to include tank ranges. With the high frequency of improvised explosive devices (IEDs) and other insurgent activity surrounding the base, training areas were created on base to support the training.

Training Areas

Fortunately for 3/9 IA, Taji possesses a large number of areas that have not

changed since the war began in 2003 and many former Iraqi army compounds remained unchanged after the fall of Saddam. We took advantage of these properties and created training areas, which were used for training phases one and three.

Tracked vehicle training range. One of the properties was a large compound that had been used for storing rockets. It was extensively bombed during the invasion and consisted of two large derelict hangar-type buildings, dirt roads, and smaller bermed areas where rockets were stored. With the exception of the two destroyed hangars (for more of an urban setting), it was an excellent area for tank driver training and a dry fire TCPC range.

Tank crew proficiency course. With the help of a company of IA engineers attached to 3d Brigade, we transformed one of the desolate areas into a valuable training resource. A dirt road was cut around the outside of the area and weaved in and out of the bombed buildings. Targets were cut from plywood and were raised and lowered by IA soldiers who communicated with the range officer in charge with handheld radios. Only 10 targets were needed to support the range and included two car targets with a sniper signature, two sniper targets, three rocket-propelled grenade (RPG) targets, and three insurgent squad-sized targets.

The TCPC included two offensive and defensive engagements. The defensive engagements included one pre-set TCP location for a stationary engagement. The idea was for the tank to support a static TCP with permanently emplaced barriers and wire. The other defensive engagement was a notional hasty or "snap" TCP. The two offensive engagements were conducted while the tank was on a notional patrol. Target signatures for the targets were very simple: blank AK-47 fire for the small-arms targets and hand-grenade simulators for the RPG targets.

Driver's training. Prior to the crew conducting TCPC, the tank drivers used the same area to practice and refine driving skills. While conducting patrols on the narrow streets of Baghdad, the tankers from 1st and 2d IA Brigades shared the common problem of colliding with civilian vehicles. While turns and dips in the road alone made the course challenging, we decided the drivers needed practice on weaving in and out of traffic. To replicate the streets of Baghdad, the engineer company towed several old IA trucks onto a flat stretch of road, forcing the tank drivers to successfully weave their way through "traffic."

Urban lane. We took advantage of a deserted and run-down complex that included a long three-story barracks building, a large three-story factory building, and several small buildings that were arranged along a paved road. This was the perfect place to train mounted and dismounted patrolling, raids, traffic control points, and cordon and searches. For more advanced training, we added IEDs, civilian role players, and weapons caches.

The Way Forward

It is clear that our Nation's exit strategy out of Iraq depends on a strong and well-trained Iraqi army and police force. One mistake our team realized not long after it arrived in Iraq is that many IA units are pushed into combat before they are ready. To make matters worse, they cease training once they assume battlespace. If the German army of World War II continued training while locked in mortal combat with Russia, then surely we can coach the Iraqi army to do the same.

With more partnerships, such as the one between 2-8 Cavalry and 3/9 IA, we will see a more rapid maturing of a professional Iraqi army. At some point in the near future, we will see 3/9 IA successfully take the lead in their shared battlespace and free up combat power for U.S. forces.

Note

[1]U.S. Army Field Manual 7-0, *Training the Force*, U.S. Government Printing Office, Washington, DC, 22 October 2002.

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Falklands Armor

by Retired Brigadier General Raymond Bell Jr.

Twenty five years ago, the British armed forces took back the remote Falkland Islands from their Argentine foes. In late May 1982, some 9,000 United Kingdom servicemen descended on the islands to wrest control from a large force of Argentine soldiers, marines, sailors, and airmen. In the British contingent were 28 officers and men of the "Blues and Royals," one of Britain's most distinguished amalgamated cavalry regiments, and one of the two mechanized formations of the British royal household cavalry.

The troopers brought with them mounts of metal and tracks — four Scorpions, four Scimitars, and a Samson. They were the only armor troops accompanying the British infantry force, consisting of elite paratroopers, Royal Marine commandos, Welsh and Scots Guardsmen, and Nepalese Gurkhas. There came a time soon after their arrival, however, when these infantrymen earnestly wished for the presence of more than just eight tracked armored fighting vehicles to accompany them into battle. The story has been told before, but on this 25th anniversary of the successful reclaiming of the Falkland Islands it is appropriate to reprise the efforts and impact of the small, but significant, addition of armor to Britain's land combat power during the campaign.

The Call Comes

For the armored cavalrymen of the Blues and Royals (a combination of two famous cavalry regiments, the Royal Horse Guards and 1st Dragoons) it all started with a telephone call. It came from an official in the War Office in London to the weekend duty officer on 1 April 1982, at the Windsor barracks of the medium reconnaissance regiment, which is located close to the royal residence at Windsor Castle in Berkshire County. The regiment, equivalent to a U.S. Army battalion, is the closest armor unit stationed near London, has a rapid response mission, and thus was the appropriate unit to contact in case of an emergency requiring armored troops. The caller from the War Office asked the lieutenant on duty, Lieutenant M. Coreth, how long it would take the regiment to mobilize a couple of mechanized cavalry troops — the equivalent of a couple of U.S. Army platoons. Coreth immediately called his colonel, who designated 3 and 4 Troops, B Squadron (the same as a U.S. armored cavalry troop), Blues and Royals, as the two platoon-sized organizations that would deploy to the South Atlantic and the Falkland Islands as part of the Falkland Island Task Force.

Now, in 1982, the British Army and its strong armor component were oriented on potentially conducting combat in Germany against the Soviet forces positioned in East Germany. Armor and armored reconnaissance units rotated from the United Kingdom to stations in the former British occupation zone in northern Germany periodically as part of the British Army of the Rhine (BAOR). The mechanized troops thus trained to meet a massive Warsaw Pact invasion if it should occur, and as a result, the BAOR was on constant alert and highly trained to defend its area of operations in northwest Germany. Armored formations stationed in Great Britain trained to take their place with their counterparts on the European continent. Combat on a group of small islands located thousands of miles from Great Britain, therefore, could hardly have

been expected to be even a secondary mission for the British mounted arm.

The Mechanized Steeds

Although armored cavalry troops were not expected to fight effectively in the remote Falklands, the deployed tracked fighting vehicles did turn out to be ideal for combat operations on the islands. The medium reconnaissance regiment was equipped with combat vehicles, reconnaissance-tracked (CVR-Ts). There were two configurations of CVR-Ts organized into troops of four vehicles, with two of each configuration per troop.

One CVR-T, constructed of steel and aluminum, was named the "Scorpion" and weighed some 8 tons combat loaded. As such, it could be lifted by a CH-47 helicopter, while two could be carried by a C-130 Hercules aircraft. The Scorpion was armed with a 76mm medium velocity gun, which fired high-explosive squash head (HESH), high-explosive (HE), canister, smoke, and illumination rounds. Maximum effective range of the main gun was 5,000 meters.

The second CVR-T was the "Scimitar," which was built on the same chassis as the Scorpion, weighed about the same, and mounted a high-velocity 30mm Rarden cannon. The 30mm fired armor-piercing, discarding sabot (APDS), high-explosive, and an armor-piercing special-effect (APSE) round, which could easily penetrate an infantry fighting vehicle or armored carrier.

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Other similarities between the two armored reconnaissance vehicles were a 7.62mm coaxial-mounted machine gun; full nuclear, biological, and chemical (NBC) protection; and a second-generation passive sight on the gunner's position. Each vehicle had a three-man crew made up of a driver, gunner, and vehicle commander. One of the major characteristics of the CVR-T, which proved to be very valuable in traversing the many peat bogs in the Falklands, was the vehicle's very low ground pressure of 4.9 pounds per square inch.

In addition to the eight CVR-Ts, a tracked recovery vehicle, designated the "Samson," deployed with a crew of two vehicle mechanics, a turret mechanic, and a recovery specialist to provide limited maintenance support to the fighting vehicles. The Samson was a modification of the CVR-T, using the same chassis and also having the advantage of making a light imprint on the boggy Falklands terrain. The low ground pressure of the Samson made it valuable for not only recovery operations, but enabled it to serve many other logistics needs when it came to maneuvering cross country. The Samson and its crew were the only maintenance elements capable of keeping the fighting vehicles operational. The Samson carried a limited supply of replacement parts and the skill level of the mechanics was such that they were not expected to perform complicated repair tasks with the tools at hand.

If the tracked fighting vehicles selected to deploy to the Falklands turned out to be the proper ones because of their low ground pressure, the main armament initially proved to be a challenge. This was because the weapons had not been test fired or boresighted since November of the previous year. There was no time before the vehicles embarked to accomplish these required tasks, and innovative means had to be sought to remedy the situation. It was not until the task force assembled at Ascension Island off the west coast of Africa, several thousands of miles from the British Isles, that the challenge could be addressed. Complicating the matter was the lack of an established tank gunnery range on Ascension Island where the entire task force had to stop to reposition men and equipment before proceeding on south to the Falkland Islands.

On arrival at Ascension Island en route to the Falklands, the Scimitars and Scorpions were off loaded from the roll-on roll-off ship, *MV Elk*, and married up with the vehicle crews. The troopers, who had embarked on the *SS Canberra* with paratroopers of the 3d Battalion, The Parachute Regiment, disembarked to join their vehicles on the island. This took some doing as there were no beaches to satisfactorily disembark or re-embark the armored vehicles. The senior armor officer present, Lieutenant Coreth, who had received the initial War Office inquiry, had to convince authorities ashore that it was necessary to boresight the vehicles' weapons, which could not be done at sea. At the same time, the Scimitars had to test fire the 30mm APDS ammunition, which had never before been fired.

After boresighting on Ascension, armored cavalry troopers tested the feasibility of firing their main armament from utility landing craft (LCU) by lowering the craft's ramp enough to clear the cannon's line of fire over the ramp. This test was to see if the cannons could be employed to support an assault during an opposed beach landing. The tank gunners had a rare opportunity to display their marksmanship as they fired at floating 40-gallon steel drums. The target practice also resulted in some amusement as the gunners had to contend with the antics of the lurching craft. Luckily, the LCUs suffered no damage and it was determined that the vehicles could provide fire support to disembarking infantry, if only tenuously.

The Skeptics

With the small armored cavalry contingent's quick mobilization and relative unpreparedness for combat, the outlook

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for successful employment of even lightweight tracked vehicles looked pretty grim on the Falkland Islands. Indeed, there were many who were skeptical about having any armor at all along for combat operations. The Falklands were not deemed "tank country," much like terrain in South Vietnam was once considered by many Americans to be inappropriate for ground armor operations.

Part of the mindset of British military leaders in the Falklands campaign resulted from deploying the type of combat troops initially involved. The first infantrymen engaged in battle were from 3 Royal Marine Commando Brigade, which consisted of three battalion-sized Royal Marine infantry units (commandos), plus two battalions of paratroopers from the 2d and 3d Battalions of The Parachute Regiment. All five battalion-sized formations were light infantry, which seldom were expected to fight as mounted troops. They might easily fly by helicopter or parachute into battle, but riding in armor-protected vehicles was not their usual modus operandi. Indeed, the mix of Royal Marine commandos and paratroopers proved to be just the type of infantry force best suited for operations in the Falklands, but they were going to fight on foot, not from armored personnel carriers.

Since the infantry usually did not fight alongside tanks, higher headquarters initially did not express an appreciation for correct use of the armor. At best, the tracked fighting vehicles would be employed on an ad-hoc basis, at least until they had a chance to prove themselves in battle. At the fight for the building complex of Goose Green/Darwin, initiated a week after 3 Marine Commando had landed on East Falkland Island, the CVR-Ts were not employed in any role.

The 2d Battalion of The Parachute Regiment was charged with attacking the Argentine garrison at its location on the southwest tip of East Falkland Island 7 days after it landed on the island 21 May 1982. With minimal helicopter and artillery support (limited by the number of aircraft and availability of appropriate ammunition), the paratroopers went into battle on foot. The battalion commander was killed along with 16 of his paratroopers, but after a short stiff fight, the Argentine force, which included a large contingent of their air force personnel, surrendered. No armor was present.

Although the battalion commander requested the assistance of the Scorpions and Scimitars, he was told by higher headquarters they were unavailable. Chalk one up to inexperience; the paratroopers considered the misconception about the employment of armor as "an extraordinary piece of misinformation."

Prejudices about employing light armor in the Falklands were primarily based on the terrain encountered. The road network on East Falkland Island, the principal area of operations, was virtually nonexistent except around the capital town, Stanley, on the eastern end of the island. In addition, the overall trafficability on East Falkland was poor. The native population used wheeled tractors and four-wheel drive vehicles to conduct business, but stuck principally to unimproved tracks to move about. They had little need to maneuver cross-country off these tracks.

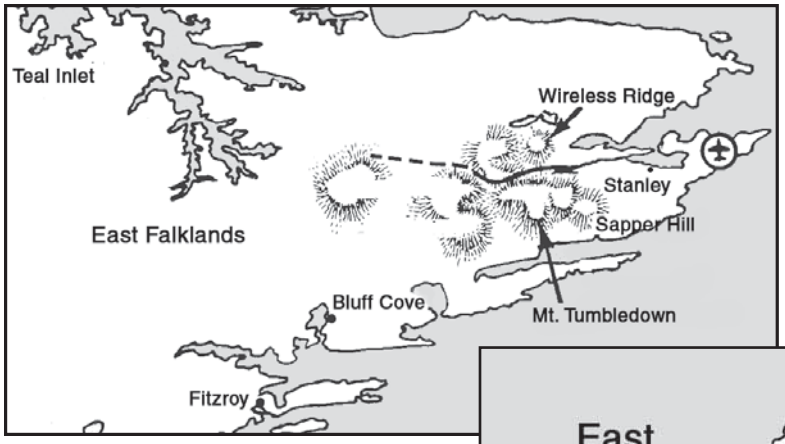
There was a misconception in the United Kingdom that movement by wheeled vehicle was impossible in the Falklands. This misconception was passed along to apply to tracked armored fighting vehicles as well. Not until the expeditionary force got on the ground did commanders come to terms with this misunderstanding. Reality set in after the experiences at Goose Green/Darwin; however, there was no more combat until the final attack on Argentine positions around Stanley in June, so the Blues and Royals had to prove themselves in other ways.

Mastering the Terrain

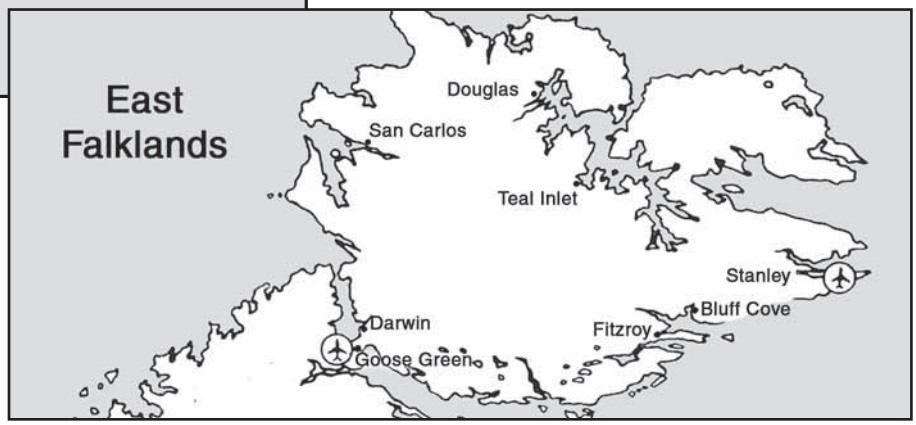
In an effort to remove the unjust skepticism placed on the tracked vehicles, the Blues and Royals set out to master the terrain. The area of operations had two key terrain components. The first component was the heights or low mountain ranges. The lower reaches proved to be less of an obstacle to tracked vehicles, except in places where the low water table made the ground soft and large boulders were encountered. The highest reaches were only traversed on foot. The second component was the virtually treeless terrain covered with peat bogs and fields of rocks called "stone runs." The runs were often hundreds of yards wide and went for several miles with boulders ranging in size from that of a man's head to that of an automobile. The stone runs could be navigated by the tracked vehicles relatively easily, while the peat bogs provided a special challenge.

The tracked vehicle drivers learned that the way to master the bogs was to drive aggressively, always seeking to maintain their forward momentum. They compared the experience to "driving on a large water bed." The drivers also learned to look well ahead as they moved forward. They watched out for green moss, which they knew covered the softest patches of terrain. When a patch could not be avoided, the driver drove straight ahead, avoiding turns, or as they called it, "sticking" (changing direction with the vehicle's steering levers). Changing direction on the soft turf caused the CVR-T's track to tear the fragile ground, which damaged the route for a following tracked vehicle. If the driver was not traveling fast enough, the CVR-T would sink to the top of its road wheels.

Recovering the bogged-down vehicles was also a trafficability hazard; however, a simple recovery remedy, not previously tested, was at hand. Each tracked vehicle carried what was called a "kinetic energy tow rope." The idea was to use the rope, which was made of a highly elastic nylon material that stretched to twice its normal length, to "pop" a sunken vehicle out of the mushy terrain onto firmer



"Just before the bitter diversionary fight for Goose Green on 28 May, 3 Marine Commando had begun the trek on foot and by helicopter east toward its final objective, the port and capital of the Falkland Islands, Stanley. The armor, having not been considered appropriate for combat with the 2d Battalion of the Parachute Regiment, went forward with the commandos and other paratroopers on their "yomp" (an extreme foot march) eastward, which they made, packing heavy loads of equipment, ammunition, and weapons."



ground. The rope was first tested on a civilian tractor that had gotten stuck in a peat bog. Lieutenant Coreth, in testing the rope, had his driver gingerly back up to the sunken tractor until the two vehicles almost touched, while the driver made sure he did not break ground surface and get stuck. The tow rope was coiled on the ground and attached between the two vehicles. Coreth then ordered his vehicle to drive "like a bat out of hell," which stretched the rope, causing the tractor to leap out of the bog. The rope quickly won many earnest adherents.

While the soft ground proved to be a major hazard, especially if a vehicle got stuck and sank in the peat, there was one good feature about operating on such terrain. During the final assault on the port city of Stanley, Coreth's Scorpion ran over an Argentine mine that was laid in a bog beside a track alongside which the vehicle was traveling. When the tracked reconnaissance vehicle ran over the mine, it exploded, throwing the vehicle into the air and severely damaging its right front running gear. However, the mine also made a big hole in the bog, which absorbed a good part of the shock thus ameliorating the amount of damage done to the Scorpion.

Becoming Believers

The two troops of the Blues and Royals quickly made the commandos and paratroopers believe in the armored troopers' capabilities, and they soon became sought after by various unit commanders. Just before the bitter diversionary fight for Goose Green on 28 May, 3 Marine Commando had begun the trek on foot and by helicopter east toward its final objective, the port and capital of the Falkland Islands, Stanley. The armor, having not been considered appropriate for combat with the 2d Battalion of the Parachute Regiment, went forward with the commandos and other paratroopers on their "yomp" (an extreme foot march) eastward, which they made, packing heavy loads of equipment, ammunition, and weapons.

Number 3 Troop with four CVR-Ts moved in support of the 45 Commando unit along the northern route to its final objective jump-off position via the settlement of Douglas, which was located on the bay of Port Salvador. Number 4 Troop accompanied the 3d Battalion of The Parachute Regiment in its yomp along a parallel route to Teal Inlet Settlement, which also lay on a spur of the Port Salvador Bay. Partly, as a result of the prevailing prejudices about the ground mobility of the tracked vehicles, the 2d Battalion of The Parachute Regiment's advance east from Goose Green was not to be supported by armor. It was on the long trek in the north, however, that the Blues and Royals began to earn their reputation for being a key ingredient in the ground battle campaign.

Moving the tracked vehicles across the northern part of East Falkland Island went without incident. The vehicle drivers took advantage of the excellent opportunity to gain experience negotiating the terrain and its vagaries, thereby gaining confidence in their ability to operate with a minimum of difficulty.

If there were any doubts about the need for aggressive first-echelon maintenance, they were soon dispelled. At the same time, armored cavalrymen proved to be of great assistance in moving heavier items of equipment for supported units. They also gave lifts to footsore and heavily burdened infantrymen struggling on the long trek. Especially welcome was the heat given off by the vehicles' engines to dry the wet boots of the slogging foot soldiers and commandos during rest halts.

For more senior commanders, proper appreciation for the various capabilities of the accompanying armor was soon achieved. At Teal Inlet Settlement, for example, Lieutenant Coreth was given the additional task of air defense officer in charge. The Scimitar gunners found it relatively easy to track the slower-moving Argentine Skyhawk and Pucara aircraft with their 30mm Rarden guns and coaxial-mounted general purpose machine guns. The combination of main gun and machine gun fire proved effective in not only scoring a number of hits, but also forcing enemy aircraft to fly higher so they would not be engaged by ground-to-air missiles.

But the real eye opener to the tracked reconnaissance vehicles' capabilities on the Falklands Islands terrain came about when the newly arrived 5 Infantry Brigade was established at Fitzroy on the southeast coast of East Falkland. The Blues and Royals were detached from 3 Commando Brigade and moved the tracked reconnaissance vehicles south to bolster the infantry brigade's position against an Argentine counterattack at Fitzroy, a journey estimated to take approximately 2 days over hardly passable and virtually trackless terrain.

The trip, however, took only 6 hours, much to the astonishment of Brigadier Anthony Wilson, commanding 5 Infan-

try Brigade, who was quoted as saying, "I never expected them to make it so quickly over the difficult ground. When I looked and saw them winding down the side of the mountain toward us, their leading troops mud-spattered and rain-soaked and their commanders half-frozen in the turrets of their vehicles, it was one of those moments I am not likely to forget." Coming from the commander of a brigade composed of two infantry battalions, the newly arrived 1st Welsh Guards and 2d Scots Guards, which normally fought from armored carriers, this was a compliment indeed.

Lieutenant Coreth noted that the journey was made under appalling weather and terrain conditions over a route very high and very steep. The contoured map indicated the going was impassable to armored vehicles. Using his initiative, however, Coreth obtained the services of a local citizen who grabbed his motor bike, threw it on the Samson recovery vehicle, and set off to guide them on the "impossible" journey. They arrived at their destination, having traveled through a suspected Argentine minefield and with nothing worse to wear than a thrown track and a broken sprocket. The place of the Blues and Royals in the campaign's history was now well established.

The Final Assault

Having successfully transferred to the command of 5 Infantry Brigade, the troopers spent the next few days, until the final assault on Stanley, performing maintenance, escorting Scots Guards reconnaissance soldiers to a forward position, escaping frequent Argentine air attacks, and finally, on 8 June helping to evacuate wounded from the logistics landing ships, *Sir Galahad* and *Sir Tristram*, anchored off Bluff Cove to a battalion aid station following a successful Argentine air strike on the ships.

The stay of 3 Troop with 5 Infantry Brigade, however, was short, as on 8 June, the reconnaissance unit was ordered north again to rejoin 3 Royal Marine Commando Brigade for the final showdown with the Argentines around Stanley. At the beginning of the move north, the troop lost the temporary use of a Scimitar when a gearbox broke and the vehicle had to be left behind until a replacement could be obtained. The CVR-T turret, nevertheless, remained operational and the crew fired its 30mm cannon successfully against attacking Argentine Skyhawks at Bluff Cove. The gearbox failure was the only major assembly to malfunction during the entire campaign, attesting to the ruggedness of the vehicle.

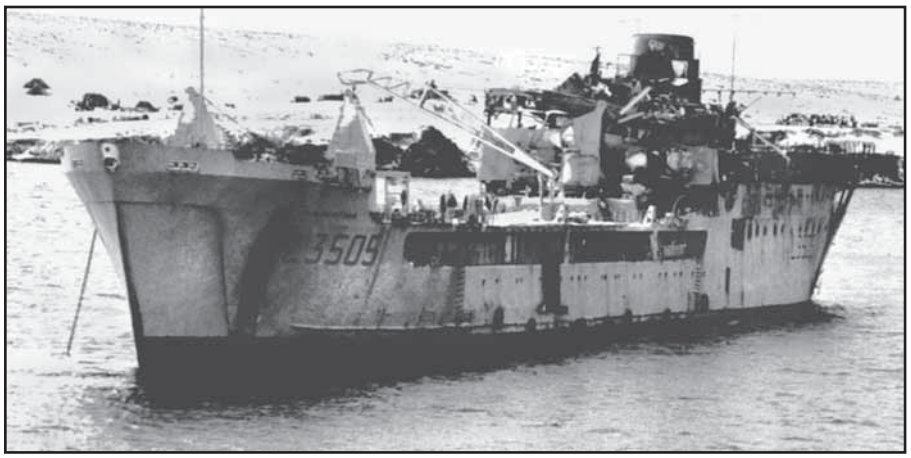
On 11 June, the three-phase operation to re-take Stanley and defeat the foe was launched. 3 Troop, with its Scimitars loaded to their double capacity with 30mm ammunition and making full use of their night sights, supported the 2d Battalion of The Parachute Regiment's attack on Wireless Ridge during the last two phases. The troop's CVR-Ts provided covering fire to paratroopers as they moved toward Stanley, and then joined the battalion, being among the first to enter the town. 4 Troop, similarly stocked with ammunition, provided support to the 2d Battalion of the Scots Guards. The troop first saw action in a diversionary role on 13 June while providing fire support to a Scots Guards night patrol who was probing the Argentine defenses around Tumbledown Mountain. The troop lost a Scorpion to a mine, but during the action, the unit was able to provide effective night fire support to the guardsmen. Once on Tumbledown, the troopers quickly advanced on Sapper Hill overlooking Stanley, leading the infantry to the top of the hill mass.

The 2d Battalion of The Parachute Regiment up north was happy to see 3 Troop arrive to support its final attacks. Deprived of armor support at Goose Green/Darwin, the unit was now determined to maximize the capabilities of the Scorpions and Scimitars. This not only meant using the vehicle's fire power, but also its night-fighting ability. The passive night sights, which the battalion commander referred to as his "eyes," proved invaluable in locating enemy positions.

During the parachute battalion's attack on Wireless Ridge, the CVR-T guns were particularly effective when using a firing technique called "zapping." Similar to the technique of reconnaissance by fire, the crews would fire their coaxial machine gun at a suspected enemy position, hoping to elicit a response. The less highly disciplined Argentine defenders usually opened fire, revealing their locations. The reconnaissance vehicle's crew immediately zeroed in on now-exposed enemy positions, hitting them with 76mm gun or 30mm cannons. The 30mm Rarden was favored as a response weapon because of its high velocity and great accuracy.

In the final attacks by the Scots Guards, the troopers of 4 Troop in the south had a different battle experience than their compatriots to the north. During the night patrol action, the lead Scorpion, with Lieutenant Coreth on board, encountered a huge crater in the trail on which the troop was advancing. Being impassable and still short of his designated firing position, Coreth decided to maneuver off the road to bypass the obstacle. It was then that the vehicle hit an antitank mine. The CVR-T rose 3 to 4 feet in the air with a blinding flash. Coreth later described the accompanying sensation as "being hit on either side of my helmet with heavy hammers." His first reaction was to get himself and his crew out of the Scorpion, which they quickly accomplished. Much to the relief of the men, they were not wounded, although there were some ringing heads and jumbled nerves.

The remainder of the troop went on to support the infantrymen's attack. Coreth, who was to be decorated for his part in the campaign, directed his remaining vehicles to continue firing while under heavy Argentine artillery fire. Because the trail on which they were advancing was so narrow and the off-road area was heavily mined, only one vehicle's weapons could initially be brought to bear on the desig-



"Having successfully transferred to the command of 5 Infantry Brigade, the troopers spent the next few days, until the final assault on Stanley, performing maintenance, escorting Scots Guards reconnaissance soldiers to a forward position, escaping frequent Argentine air attacks, and finally, on 8 June helping to evacuate wounded from the logistics landing ships, Sir Galahad and Sir Tristram, anchored off Bluff Cove to a battalion air post following a successful Argentine air strike on the ships."

"The Blues and Royals added the bright laurels of the Falklands campaign to their illustrious history. Not only was their participation an important part of the British task force's victory, it was also a personal victory for the troopers, corporals of horse, and lieutenants who were part of the fighting. These armored cavalrymen fully proved their ability to effectively do battle under the worst combat conditions."

nated targets. Coreth, sitting on the outside of his remaining CVR-Ts, alternatively brought each vehicle forward to fire its onboard weapons. In his personal diary, Coreth described his activity as participating in "a crazy shoot from one vehicle, sitting on the outside, reverse him, climb onto another, bring him forward, fire him, and so on till the last."

Victory

The overall performance of the Scimitars and Scorpions was considered one of the real success stories of the Falklands campaign. Not only were they valued members of the combat team, their presence proved to be a major educational experience for the light infantry units they fought beside. For instance, it was the first time the Royal Marine commandos had the opportunity to see how effective light armor could be used in future operations. Because 3 Royal Marine Commando Brigade had a NATO mission in northern Norway where tracked vehicles were employed extensively on snow and ice, gaining an appreciation for fighting with similar vehicles armed with powerful cannons proved to be a valuable lesson.

The Blues and Royals added the bright laurels of the Falklands campaign to their illustrious history. Not only was their participation an important part of the British task force's victory, it was also a personal victory for the troopers, corporals of horse, and lieutenants who were part of the fighting. These armored cavalrymen fully proved their ability to effectively do battle under the worst combat conditions. Perhaps more importantly, they proved the naysayers wrong on the subject of employing armor effectively on the Falkland Islands. For 28 junior officers and men, this was, in itself, a major accomplishment of which their armored cavalry peers and superiors, as well as the entire British Army, could rightfully be very proud.

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Brigadier General Raymond E. Bell Jr., U.S. Army, Retired, is a 1957 graduate of the United States Military Academy. He received an M.A. from Middlebury College and a Ph.D. from New York University. His military education includes the U.S. Army War College and the National War College. As an armor officer, he served in the 3d Armored Cavalry Regiment, 32d Armor, 15th Armor in Korea, and 5th Cavalry in Vietnam. His last two assignments included the U.S. Army Reserve's 5th Psychological Operations Group and its 220th Military Police Brigade.

Driver's Seat *from Page 5*

- Soldiers should rest before and in between strenuous exercise.
- Soldiers should loosen clothing while resting.
- Soldiers should report when they are not feeling well, especially before, during, or after strenuous exercise.
- Soldiers should wear light clothing whenever possible.
- Soldiers should not be allowed to wear unnecessary layers of clothing.

First Aid

Heat-related illnesses can usually be reversed in the early stages by following these steps:

- Get the victim out of the heat.
- Loosen any tight clothing and apply cool, wet clothes.
- Give cool water if the victim is conscious, about one glass every 15 minutes.
- If the victim refuses water, vomits, or loses consciousness, call 9-1-1.

Immediate first aid and evacuation of a soldier suffering from a heat injury is critical.

Leaders must know his soldiers' weaknesses to minimize their risk of heat injury. The key to preventing heat injury is knowledge and education on the risks, causes, and preventive measures. When training in a hot and humid environment, leaders are reminded:

- Soldiers should rest in a cool or shady environment.
- Concurrent hydration is critical.
- High air temperature, high relative humidity, and exposure to the sun make it difficult for soldiers to regulate their body temperature.
- Excessive clothing prevents heat from being lost to the environment.
- Heat injuries are commonly associated with hard work in hot weather; however, they can also occur in relatively cool conditions when soldiers are dressed in heavy protective clothing.
- These same principles apply at night. If there is inadequate cooling of the body during physical exertion at night, heat injuries can occur.

Again, when heat injury occurs, it is an indication of failure of one or more components of the prevention system. Responsibility for soldiers' health and well being depends heavily on vigilant and instinctive leaders; however, safety is everyone's job.

"Teach our young Soldiers and leaders how to think; not what to think."

Winning in Degraded Mode

by Wakeland K. Kuamoo and Sergeant First Class Brian Reel

It is well established that the Abrams main battle tank is the finest armor fighting vehicle in service today. The Abrams offers invaluable armor protection to crews and incredibly overwhelming firepower. During combat operations, reports have shown that the Abrams tank can engage and destroy targets in urban environments, as well as at extended ranges, using both precision and degraded mode gunnery techniques.

The majority of the tank's lethality depends on how well its crew is trained to perform under various conditions. Current armor doctrine, U.S. Army Field Manual (FM) 3-20.12, *Tank Gunnery (Abrams)*, provides guidelines for a multitude of different types of tasks, conditions, and standards that our tankers could encounter on the battlefield.[1]

Expertise in target acquisition, sensing, and subsequent round adjustments are critical elements of overall gunnery proficiency. However, to avoid writing a 200-page publication, this article simply examines methods to develop and sustain gunnery performance through the use of manual controls and the gunner's auxiliary sight (GAS), which will enhance full-up gunnery proficiency.

Fighting with a full-up system is the preferred method of engaging targets. However, due to continuously changing battlefield conditions, using degraded mode gunnery techniques may be required. During the quick tempo of urban conflict, it may be necessary to engage targets using battlesight techniques. Many targets are only visible within a 2- to 5-second window of opportunity, necessitating a "quick-shot" technique to effectively place fire on these targets. Extended operations in a 360-degree threat environment, with limited ability to pull back and make repairs, may force units to continue the fight while maintaining the momentum of the battle. This fight includes completing the mission, protecting the Abrams' technology, and movement to maintenance or resupply points.

FM 3-20.12 describes degraded-mode gunnery as "fighting with less than a fully operational system."[2] This degradation can be caused by a fault in the fire control system or by environmental conditions. Faults in the fire control system could force the crew to use manual controls and/or the GAS. Combat reports indicate some tank crews are closing their ballistic doors (dog house) to prevent insurgent attacks against primary sighting systems, again relying on the GAS to engage immediate threats and allow continued scanning. Top attacks, snipers, and environmental conditions have also forced tankers to fight from the closed-hatch position. Always remember that anything less than a 100-percent situational awareness of the crew's surrounding area will limit its overall effectiveness.

Crew-level tank tables prescribe a progressive training method toward crew qualification. Based on this method, crews should move from basic tables, only after mastering all tasks, to intermediate tables. Basic tables (with or without simulations) include manipulation and tracking exercises that assist in developing hand

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and eye coordination, which forms the basis for gunner firing techniques.

Unit leaders must take advantage of early opportunities to train crews how to use the vehicle's onboard GAS. Tank table IV's laser rangerfinder (LRF) failure task provides the initial opportunity for this training. Successful completion of this task is critical for continued training proficiency. Tank tables V thru VII provide additional tasks of degraded-mode gunnery that incorporates the GAS. Tank crews allowed to proceed to the crew-qualification course without successfully mastering the GAS increase their risk of failing the course. Never allow a weak crew to move forward without mastering all required skills (with emphasis on the GAS) of the previous tables.

The key to any successful gunnery program is properly building and monitoring the overall tasks. In this case, degraded-mode gunnery must be properly built and closely monitored to ensure crews are meeting required levels of proficiency before moving forward in the training cycle. Range time can hinder a successful program, which is why early training and successfully executing these difficult tasks at home station is critical. Closely monitoring these difficult tasks (or others like it) may force leaders to integrate more of these tasks in the lower tables to ensure satisfactory proficiency during crew qualification.

Our tankers are deployed worldwide and must have the capability to successfully fight in both urban and open areas. Given the ever-changing battlefield, while precision gunnery is the preferred fighting posture, degraded-mode gunnery could become the norm very quickly.

Train for the fight, any fight, any where, under all conditions — these are the minimum standards tankers need to achieve and guarantee victory.

Notes

[1]U.S. Army Field Manual (FM) 3-20.12, *Tank Gunnery (Abrams)*, U.S. Government Printing Office, Washington, DC, 15 August 2005.

[2]Ibid.

Master Sergeant Wakeland Kuamoo, U.S. Army, Retired, currently provides contractor support for large caliber ammunition to Fort Knox, KY; Picatinny Arsenal, NJ; and Rock Island Arsenal, IL. He served in various duty positions, to include senior live fire train, Bosnia and Herzegovina; chief, master Gunner Branch, Fort Knox, KY; first sergeant, A Company, 2d Battalion, 35th Armor, Fort Carson, CO; senior armor trainer, Technical Assistance Field Team, Republic of Yemen; and division master gunner, 2d Infantry Division, Korea.

Sergeant First Class Brian Reel is a senior doctrine writer/developer, Directorate, Training, Doctrine, and Combat Development, Fort Knox, KY. His military education includes the Advanced Noncommissioned Officer Course and Master Gunner Course. He has served in various positions, to include platoon sergeant, Mobile Gun System, 1st Battalion, 23d Infantry, 3d Brigade, 2d Infantry Division, Fort Lewis, WA; brigade operations sergeant, 3d Brigade, 1st Infantry Division, Vilseck, Germany; tank platoon sergeant, B Company, 1st Battalion, 35th (1-35) Armor, 1st Armored Division (1AD), Baumholder, Germany; and master gunner, B Company, 1-35 Armor, 1AD, Baumholder.

My Kingdom for a Proper Fitting Fan Belt

by Lieutenant Colonel Scott Fowler

In the northeast corner of the Patton Museum, there once was a display (until 2006) on the subject of ill-fitted engine fan belts for the M26 Pershing tank during the early days of the Korean conflict. One had to search for the display because it was tucked in behind an M47 tank.

As the Army underwent its postwar reduction at the end of World War II, from eight million men and 89 divisions to 591,000 men and 10 divisions, it also underwent numerous structural changes.[1]

After detonation of the atomic bomb, strategists determined that conventional warfare was obsolete, which resulted in personnel and equipment being reduced to a minimum. To build back the Army's strength after these massive cuts, the Army downplayed its combat role and emphasized its career and training opportunities. This carried over to training, where recruits were given a much reduced regimen, as opposed to the strict discipline required of an Army in the field. By 1950, the Army seemed to have forgotten that a soldier's job was to fight.[2]

25 June 1950

At the time of the North Korean invasion, there were no U.S. combat troops in Korea. The closest combat troops to Korea were four divisions on occupation duty in Japan, the 7th, 24th, and 25th Infantry Divisions, and the 1st Cavalry Division (dismounted). Close at hand was the 29th Infantry Regiment on Okinawa and the 5th Regimental Combat Team in Hawaii. The only other ground unit in the Pacific area was the 1st Marine Division in California.

The U.S. Army units in Japan were at approximately 70 percent of their combat strength. They had no where near their full complement of recoilless rifles, mortars, and machine guns. The units were also lacking in anti-tank mines and did not have the new 3.5-inch bazookas. Since it was feared heavier tanks would tear up Japan's roads and cause its lightweight bridges to collapse, the divisional tank units were equipped with M24 light tanks instead of the heavier M4 or M26 medium tanks.[3]

On 25 June 1950, North Korea's army invaded South Korea on multiple fronts with eight full divisions, two half divisions and 120 T-34 soviet-made tanks against a poorly armed Republic of Korea (ROK) army. Armed with obsolete 37mm anti-tank guns and 2.36-inch bazookas, the South Koreans were unable to stop the armored monsters.[4]

28 June 1950

On 28 June 1950, the fourth day of the war, Colonel Olaf P. Winningstad, Eighth Army ordnance chief, found three M26 Pershing medium tanks at the Tokyo Ordnance Depot in bad condition and needing extensive repairs, including rebuilt engines. The repair work began at once and was completed on 13 July. The three tanks were shipped to Pusan where they arrived on 16 July, the first American medium tanks in Korea. Arriving with the tanks, Lieutenant Samuel R. Fowler and 14 enlisted crew members, trained to operate M24 light tanks, were expected to become familiar with the Pershing tank.

The tanks experienced mechanical difficulties because their ill-fitted fan belts would stretch, causing their motors to overheat. Belts made in Japan were either too short or too long despite emergency orders to have them corrected. Eighth Army hoped to use the M26 tanks to help stop North Korea's drive in the southwest and sent the tanks by rail to Chinju where they arrived at 0300 hours, 28 July. They were unloaded at the rail transportation office on the south side of the Nam River where they awaited new belts.

When the North Korean 6th Division entered Chinju on the morning of 31 July, the M26 tanks took no part in the battle. Flatcars from Pusan to evacuate the tanks passed through Masan the morning of 31 July, but never got beyond Chungam-ni, about 25 miles short of Chinju. A rail traffic snarl caused by evacuation of the 19th Infantry's supplies blocked the way. At daybreak, Lieutenant Fowler went to

"...three tanks were shipped to Pusan where they arrived on 16 July, the first American medium tanks in Korea. Arriving with the tanks, Lieutenant Samuel R. Fowler and 14 enlisted crew members, trained to operate M24 light tanks, were expected to become familiar with the Pershing tank."

Colonel Ned D. Moore, the 19th Infantry's commander, for instructions. Moore told him that if the enemy overran the 19th Infantry's positions on the northwest side of Chinju and he could not evacuate the tanks on their own power, he was to destroy them and evacuate his tank crews by truck.

Lieutenant Fowler telephoned Masan and apparently learned that the flatcars had departed for Chinju to get the tanks, so he decided to stay. Gradually, the firing in Chinju died down. A ROK soldier who passed the rail station about noon told Fowler that only very few ROK soldiers were still in the town.

Sometime later, William R. Moore, an *Associated Press* correspondent, suddenly appeared and suggested that Fowler check out a group of men coming up the rail track. It was now perhaps an hour past noon. Fowler had an interpreter call to the approaching men — they were North Koreans. Fowler ordered his tank crews to open fire. In the fire fight that immediately flared between the tanks' .30- and .50-caliber machine guns and the enemy's small-arms fire, Fowler was hit with a bullet on his left side. During this close-range fight, the tanks' machine gun fire killed or wounded most of the enemy group, which was about platoon size. The tankers put Fowler in his tank and began moving the three M26 tanks east on the road to Masan.

Two miles down the road, the tanks came to a blown bridge. The men prepared to abandon the tanks and proceed on foot. They removed Fowler from his tank and made a litter for him. Fowler ordered the men to destroy the tanks by dropping grenades into them. As soon as three crewmen started for the tanks, an enemy force lying in ambush opened fire. A number of men got under the bridge with Fowler. Master Sergeant Bryant E.W. Shrader (Silver Star recipient), the only tanker manning the tanks, opened fire with the .30-caliber machine gun. A North Korean called out in English for the men to surrender.

Shrader left the machine gun and started the tank, driving it as close as he could to one of the other tanks. He dropped the escape hatch and took in six men. He then drove back toward Chinju and stopped

"...on their arrival in Korea, these Pershing tanks were the only allied tanks on the Korean Peninsula that could rival the North Korean T-34 tank, so they were pushed to the front line quickly, despite their shortcomings. There must have been a great sense of urgency inside the Pusan perimeter and U.S. commanders needed tanks that could stop North Korea's T-34."

the tank a few feet short of the bridge over the Nam, undecided whether to cross to the other side. There, the overheated engine stopped and would not start again. The seven men abandoned the tank and ran into the bamboo thickets bordering the river. After many close calls with enemy forces, Shrader and his group finally reached safety and passed through the lines of the 25th Division west of Masan.

The men back at the blown bridge had no chance. Some were killed or wounded at the first fire. Others were killed or wounded under the bridge. A few ran into nearby fields trying to escape, but were killed or captured. One captured soldier later recalled that he saw several bodies floating in the stream and recognized two as Fowler and Moore.[5] The only medium tanks in Korea were lost.[6]

Studying this part of the Korean war some 57 years later, I pondered what was going through the minds of Fowler and his soldiers during their departure from Japan, their arrival at the Pusan port, and their movement to the front line at Chinju. There is not enough written about this particular part of history to get into the details of what Fowler and his soldiers experienced. For instance, we have no idea how much the soldiers knew about the fan belt problem with their Pershing tanks, or if they even had the capability to apply measures to overcome the problem. I would venture to say they did what they could under the circumstances.

Today, we use a pre-combat inspection (PCI) sheet that lists all the items needed prior to movement. A leader's initial inspection includes preventive maintenance checks and services (PMCS), followed by the DA Form 5988E, the dispatch, and technical manual (TM). However, on their arrival in Korea, these Pershing tanks were the only allied tanks on the Korean Peninsula that could rival the North Korean T-34 tank, so they were pushed to the front line quickly, despite their shortcomings. There must have been a great sense of urgency inside the Pusan perimeter, and U.S. commanders needed tanks that could stop North Korea's T-34. Without being there, I will probably never know how much attention was pushed higher about the condition of the M26 tank's fan belts and thus the future operation of the tanks. However, I can safely assume that, at the time, the mission was to get the tanks to the front to help slow down the armor attacks until additional allied medium tanks arrived.

Notes

[1]Brigadier General William A. Stofft, *Army Historical Series*, American Military History, Office of the Chief of Military History, U.S. Army Center for Army Lessons Learned, Washington, DC, 1989, p. 540.

[2]Jim Mesko, *Armor in Korea: A Pictorial History*, Carrollton, Squadron/Signal Publications, February 1984, p. 6.

[3]Ibid., p. 7.

[4]Ibid., p. 6.

[5]Roy E. Appleman, *South to the Naktong, North to the Yalu*, Department of the Army, U.S. Government Printing Office, Washington, DC, May 1998, pp. 231-233.

[6]*Armor in Korea*, p. 13.

Lieutenant Colonel Scott K. Fowler is serving as executive officer, Office of the Special Assistant to the Commanding General, Fort Knox, KY. He received a B.A. from Northern Kentucky University. His military education includes the U.S. Army Command and General Staff College, the Armor Officer Basic and Advanced Courses, and Combined Arms and Services Staff School. He has served in various command and staff positions, to include executive officer, 4th Battalion, 85th Training Support Brigade (4/85 TSB), Fort Knox; plans officer, 4/85 TSB, Fort Knox; S3, 103d Chemical Battalion, Kentucky Army National Guard (KYARNG); commander, University of Kentucky, Army Reserve Officer Training Corps, Lexington, KY; company commander, 3d Battalion, 123d Armor, KYARNG; platoon leader, A Troop, 1st Squadron, 4th Cavalry, 1st Infantry Division (Forward), Boeblingen, Germany; and tank platoon leader and company XO, C Company, 4th Battalion, 37th Armor, 2d Brigade, Fort Riley, KS.

LETTERS from Page 3

This brief review showcases two important points: that the wrong questions have been asked about cavalry needs for six decades (at least), not four; and it is clear — and this is LTC Kojro's implicit point — the main reason the Army keeps asking and answering the wrong questions is because it seeks to fit doctrine to available technology instead of tailoring available technologies to doctrinal needs.

As a professional military historian, it pains me to see that this still appears to be the case as we transform from the current force (mounted in HMMWVs and Bradleys), through the interim force (HMMWVs and Strykers), and ultimately to the future force (Future Combat System).

ABRAHAM J. EDELHEIT

"Riding to the Sound of the Guns"

Dear *ARMOR*,

I enjoyed reading "Ground Cavalry Troop in Afghanistan," by Captain Mike O'Neil in the May-June 2007 issue of *ARMOR*. I was especially interested in the organization. Some of your readers don't realize how much the cavalry has changed since Vietnam. Our squadron commander believed in "riding to the sound of the guns," so he would call and tell us to leave one crewman per vehicle and become a provisional rifle company. Because Delta Troop (air) was assigned to our squadron, we normally had about an hour to get ready for UH1 pickup. My biggest concern was indirect support, so my supply sergeant did some "trading" for 61mm mortars and ammunition, so our mortar crew could support us when we hit the ground. If my memory is still good, C Troop, 1st Squadron, 10th U.S. Cavalry, only conducted five airmobile assaults (only one hot) in my 11 months in command.

WILLIAM A. BRINKLEY
COL, U.S. Army, Retired

5th AD at St. Vith: Could the Battle of the Bulge Have Been Prevented?

Dear *ARMOR*,

I thoroughly enjoyed Captain Borows' article, "Armor's Stand at St. Vith," in the March-April 2007 issue of *ARMOR*.

My unit, Company C, 628 Tank Destroyer Battalion, probably owes much to Colonel Bruce Clarke, his combat command of the 7th Armored Division, and the other unit stragglers he was able to enlist to help defend at St. Vith and delay the German advance.

We were attached to CCR, 5th Armored Division, and had just come out of Hurtgen Forest. We were given replacements from a corps tank destroyer battalion, which was being dissolved, and were given the new M36 tank destroyer with the 90mm anti-tank gun.

The 5th Armored Division, having been in Hurtgen Forest, was given the mission of anchoring the bulge near Monschau and backing up the four infantry divisions that were anchoring the bulge on the Elsenborn Ridge. They were the 2d, 1st, 9th and 99th Infantry Divisions. These divisions did such a great job that 5th Armored was never completely committed.

My unit was temporarily transferred from the 5th Armored Division and attached to the 82d Airborne Division, which was adjacent to the 7th Armored Division, to assist in their anti-tank defense. The German forces were blunted and stopped before reaching the Meuse River and driven back across the border.

An interesting article was reprinted in March 2007 in the 5th Armored Division's newsletter that presupposes if our penetration of the Siegfried Line by CCR, 5th Armored Division in September 1944 had been acted on by Corps or Army, there might not have been a Battle of the Bulge.

ROBERT W. HERMAN
LTC, U.S. Army, Retired

REVIEWS

The Wolves of Islam: Russia and the Faces of Chechen Terrorism by Paul Murphy, Brassey's Inc., 2004, 268 pp., $27.95 (hardcover)

Dr. Paul Murphy's *The Wolves of Islam* is an elementary introduction to the other half of the Global War on Terrorism: the Russo-Chechen conflict. Not only does this conflict pre-date the United States' 11 September 2001 entry into the global conflict, but it is beyond the pale in its savage brutality. Murphy's 268-page book takes the reader from the breakup of the Soviet Union, through the turmoil of the Russian Federation, and finally up to the current Global War on Terrorism. Although the book provides a detailed timeline of the war, it lacks a number of fundamental academic prerequisites to be a useful reference, and sometimes overstates the capabilities of the Chechen terrorists.

The Russo-Chechen war is perhaps one of the most misunderstood conflicts of the early 21st century. What started out as a war of nationalism by independent-minded Chechen citizens morphed into a war of Islamic extremists who wanted to reestablish historically based independent Islamic states in the Caucasus region of Russia. Led by Chechnya's first president, former Soviet Air Force General Djokhar Dudayev, the first Chechen war (1994-1996) started as a nationalist movement against the Moscow government when Dudayev declared Chechnya an independent state from the Russian Soviet Federated Socialist Republics. Chechnya's oil-rich land and population of over one million was a major prize Russia could ill afford to lose. The Chechens won the first war with Russia when a settlement was reached with Moscow. The second Russo-Chechen war began in 1999 when Chechen warlord and terrorist Shamil Basayev, accompanied by a collection of Islamic terrorists, invaded Russian-controlled Dagestan to establish a Taliban-like state and an idealistic "Allah's land" (Murphy's words) from the Caspian to the Black Sea. This situation concerned the Russian government enough to move large numbers of military and state security troops to put down the invasion. After a few months of intense fighting, the Russian government sustained enough victories on the battlefield to force Chechen fighters to adopt terrorist tactics targeting Russian schools, hospitals, and public gathering places in neighboring states and in Moscow. The conflict continues to this day, with news stories of bombings and attacks on civilian centers still emanating from Russia.

Although Murphy provides a good historical summary of the conflict and is sensational in his description of the well-known attacks on Moscow's Dubrovka House of Culture Theater in October 2002 and massacre of school children at the Beslan School in 2004, he fails to provide a balanced view of the war. He glosses over the state-sponsored assassinations and attacks by Russian soldiers in the same conflict. His use of the terms "wolves" to describe all Chechens — soldiers, politicians, terrorists, diplomats, businessmen, women, and children — is a dangerous form of cultural elitism that has implications here in the United States regarding how we view the war in Iraq. He also gives too much credence to the Chechen's capability to produce nuclear weapons. According to researcher Andrew McGregor of the Jamestown Foundation, a non-profit organization whose mission is to inform and educate policymakers and the broader policy community about events and trends in countries strategically important to the United States, especially Eurasia, "Murphy appears especially eager to promote Chechens as a source of 'nuclear terrorism.'" The evidence cited by Murphy appears to be more media sensationalism, rather than hard facts.

Additionally, the author fails to cite references for many of his facts and figures. Although Murphy does acknowledge this issue in the opening pages, his lack of citations leaves the reader feeling dubious about the events described. Another annoyance, but one that would help the reader better understand the conflict, is a lack of detailed maps. Murphy provides only one map, on page 3, which gives the reader little in Chechnya's geographic relationship to other countries in the region. Although the Chechen conflicts have been in the news for a number of years, most Western readers are not as familiar with the Caucasus region as they are with the geography of Afghanistan or Iraq.

Dr. Murphy is a former U.S. senior counterterrorism official who lived and worked throughout Russia and Central Asia between 1994 and 2004. He is also a university professor and television commentator who has lectured in the United States, Australia, and Russia. In 2002, he was a congressional advisor on United States-Russian counterterrorism issues. His other works include: *Brezhnev: Soviet Politician, The Soviet Air Forces*, and *Naval Power in Soviet Policy*.

Murphy's credentials and background should have resulted in an excellent book on the history of Russo-Chechen conflict. However, readers who desire to learn more about the war should use *The Wolves of Islam* as a primer for the major events, but seek readings that provide a balanced approach, with sources, to the deeper causes of the conflict and the decisions of both sides.

JAYSON A. ALTIERI
LTC, U.S. Army

Heavy Metal: A Tank Company's Battle to Baghdad by Captain Jason Conroy with Ron Martz, Potomac Books, Inc., Dulles, VA, 2005, 288 pp., $26.95 (hardcover)

Heavy Metal follows the story of C Company, Task Force 1st Battalion, 64th Armor Regiment, 3d Infantry Division, from its arrival in Kuwait to its fight through Operation Iraqi Freedom as told by its company commander, Captain Jason Conroy. Conroy, "Cobra 6," vividly recalls the series of events, with assistance from Ron Martz, an embedded journalist from the *Atlanta Journal-Constitution.* Eyewitness accounts from his soldiers, contributions from his superiors, and background information behind the decisions during the March 2003 offensive, give depth to Conroy's narrative. Charlie Company first arrived in Kuwait in September 2002 on a scheduled peacekeeping mission — Operation Desert Spring. Nevertheless, the world political climate changed and Charlie Company had to adapt its task and purpose to a new training focus — preparing to attack.

Though *Heavy Metal* immediately thrusts the reader into the ultimate street fight — between the M1A1 Abrams and Iraqi T-72s in Mahmudiyah, a town just south of Baghdad, it quickly loses its fire. "The Wait in Kuwait," Chapter 5, pretty accurately describes the feeling when reading the next five chapters. But just when you've had enough redundant shout-outs from Conroy to his soldiers, March 2003 arrives, and a Tomahawk cruise missile flying above Charlie Company, now at its final staging position near the Iraq-Kuwait border, signals that negotiations have failed, an ultimatum was ignored, and a fight is coming. Conroy blends personal perspectives of his soldiers with a commander's keen overall awareness into a solid account of his company's actions under fire. Still, taking nothing away from Charlie Company's accomplishments, anyone who's driven the highways in Iraq knows that the, "ten-mile run into the heart of Baghdad," which the Cobras executed along Highway 1, is a bit exaggerated. While Charlie Company's story doesn't end there, the story line continues along in the same manner.

Prior to the ground war, nobody could have predicted how urgent the need for American tanks in urban terrain would become. But certainly no one can dispute the Abrams' significance not only then, but currently as well. It's really not until the Epilogue that Conroy's strongest contribution to the book emerges — a thought-provoking reflection and criticism of the future of armored forces in the urban fight.

While *Heavy Metal* isn't a definitive work, it is a relevant and timely text, written in the tradition of *Platoon Leader*. For the armor community, especially company grade officers seeking to understand leadership lessons not taught in the classroom, this book is both compelling and insightful.

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The New American Militarism: How Americans Are Seduced by War by Andrew J. Bacevich, Oxford University Press, New York, 2005, 270 pp., $28 (hardcover)

Many learned academicians and pundits will review this new book by Professor A.J. Bacevich. Bacevich, a former soldier and officer, has written an important book. I write from the perspective of a soldier and an officer of 28 years of service and will explore what fellow professional officers can learn from reading this book. *The New American Militarism* is a book that should be studied as our Republic enters the 21st century. I agree with the purpose of his book. Bacevich cites President Madison, who wrote that the most dreaded enemy of public liberty is war, "No nation could preserve its

freedom in the midst of continual warfare." Bacevich's purpose in writing is to invite Americans to consider the continued relevance of Madison's warning to our time and circumstances.

I agree with both Madison's warning and Bacevich's purpose, but I do not think his conclusion, that our society is seduced by war, is at all correct. I do believe some of the insights he offers on contemporary history are valid and should inform various debates that are ongoing in both the fields of political science and history, and more importantly, in the here and now of policymaking. The book also points out valid warnings for officers serving the Republic.

Historians can set the stage for policy by showing previously unforeseen second- and third-order effects of past policy decisions due to the advantage of historical perspective. Policymakers must have a sense of history to engage in the continuous analysis and refinement of a policy once a decision is made. Policy is often made in the heat of the moment because no one wants to make tough, and likely unpopular, decisions when there is no urgency. Bacevich is trying to be both historian and policy commentator.

Bacevich opens the book by making four personal observations; he is a Vietnam veteran, a retired professional soldier, a latecomer to politics, and has changed his personal understanding of history moving from the theory of "great men," to seeing history as a force. These observations, but especially his personal appreciation of politics and his experience in seeing the feet of clay of the "great" men of American politics, focus the development of his thesis that American society has been "militarized," in that the American body politic has grown accustomed to a resort to arms as the final arbiter of policy problems. This tendency is not the result of any one administration, rather a trend in American policy since the time of Woodrow Wilson. Indeed Bacevich opines both Democrat and Republican administrations are neo-Wilsonian in their world views and approaches to the Unites States' dealings with other nations. Vietnam, as a national experience, was a catalyst for our militarization.

Bacevich goes on to demonstrate, not very strongly in my opinion, how the efforts of four disparate groups: soldiers, intellectuals (right and left), strategists wrestling with the implications of nuclear weapons, and conservative Christians, conditioned the American body politic to military strength as the measure of greatness and the use of force as a first resort to "solving" policy problems. Bacevich states, "The clamor after Vietnam to rebuild the American arsenal and to restore American confidence, the celebration of soldierly values, the search for ways to make force more usable: all of these came about because groups of Americans thought that they glimpsed in the realm of military affairs the solution to vexing problems."

These "vexing problems" face the four groups Bacevich outlines in the body of the book. There are many instances in the passages ostensibly supporting his premise where he cites opinion as evidence. I really had a difficult time establishing the difference between his opinions and the actual facts that support his assertions. The best written portion of the book is where he explores the military experience of the American soldier from the Vietnam era to the present. The most powerful statement in the passages on the efforts of soldiers in the period comes in the opening pages. Bacevich writes, "Thus, as we shall see, military professionals did regain something approximating the standing that they had enjoyed in American society prior to Vietnam. But their efforts to reassert the autonomy of that profession backfired and left the military in the present century bereft of meaningful influence on basic questions relating to the uses of U.S. military power." I absolutely agree with this statement.

Many people, including soldiers, will point to opinion polls that place the military as one of the most respected professions in our Republic. While that may be true, it is also ephemeral. What is enduring is the role serving officers play as respected players in the formulation of policy. Bacevich asserts that beginning with Creighton Abrams linking the regular Army with the Reserves, senior officers attempted to directly influence policy by limiting the ability of the president as commander-in-chief to make use of the Army. Bacevich takes General Powell to task as the real reason why we are at war in Iraq now, because Powell prevailed on President Bush to halt Operation Desert Storm before the Iraqi army was completely defeated, thus eliminating the possibility of Saddam's overthrow in 1991. Bacevich also cites the well-documented argument between then Secretary of State Albright and Chairman of the Joint Chiefs of Staff Powell over the use of force in the Balkans. All of these instances Bacevich cites as military attempts at frustrating the chief executive and his use of military power to pursue policy objectives.

Bacevich's "knock out" punch is his assertion that it was then General Wesley Clark's poor handling of the Kosovo crisis during the Clinton administration that led the incoming Bush administration policymakers to realize that senior military officers were not very good at handling military force and could not be trusted in policy formulation.

I agree with Bacevich that at some time in the aftermath of the Vietnam War, Army senior leaders decided to focus on matters tactical and operational, and left the world of strategy and policy to the civilians. The notion of never again allowing the Army to be committed to battle without the full support of the people is a noble concept. We are the Army of the Republic. Resting on that concept and actively pursuing excellence in only the operational and tactical levels of war put us on the path of ever-limited influence in developing policy. I am not advocating that the Army's role is developing all security policy; however, Bacevich does point out that as officers serving the Republic, we are obligated to understand how policy is made, where the decisions are taken, and the implications of these decisions. I would offer a turn about of Clemenceau's statement that if war is too important to be left to generals in the 21st century, policy is too important for generals and general staff officers to ignore. Wars are won and the Republic is defended at the strategic and operational levels. If we ignore our duty to participate in developing policy and strategy, we will squander tactical success.

Bacevich concludes his book with 10 principles that he asserts would cause the militaristic tendencies within our society to abate. These "principles" are interesting and I offer many truly are worthy of debate. Lately, Ms. Susan Vennochi, an editorial writer for the *Boston Globe*, penned an essay on why her son should not serve in the Army, though she would applaud other citizens' sons and daughters who might serve. "Anyone but my son," she said. Bacevich calls for a revival of "the moribund concept of the citizen-soldier." He says that the day of the all-volunteer force is over and the Army must ensure it has deep roots among the people. The Army must also be an army of the people and thus mirror society. He writes that government ought to be "creating mechanisms that will reawaken in privileged America a willingness to serve." I cannot disagree with that.

These principles do deserve more than debate in the halls of academe and at conferences of political scientists out of government. I offer these ideas really should be widely discussed. Army officers, indeed all officers, have the obligation to be engaged in the internal debates, and must have informed positions. When we serve in the Pentagon, on the National Security Council, in legislative liaison, and other positions, we must serve the Republic by explaining the ramifications of decisions, knowing the history of past decisions, explaining what risk really is, and more. Officers must understand the when and how of government decisionmaking, not to usurp the process, but to be better engaged. The Republic needs to understand just what kind of war we are in and determine what kind of measures we will take to defend the Republic.

I return to point of exploration and just what a professional officer can learn from reading this book. Do I agree with Bacevich that our society has become militarized; in that, it is numb to the use of force? No, I disagree. Do I agree with Bacevich that there is the appearance of a divorce from the concept of all Americans serving the Nation in uniform as a responsibility of citizenship and that supporting the troops is more than putting a yellow magnetized ribbon on the car? Yes, wholeheartedly. Professional officers serving the Republic in the 21st century must have a grasp of strategy and the development of policy. We must know the origin of ideas and concepts, if we are to serve both our soldiers and our Republic. We cannot merely state that the consequences of bad policy is body bags, that is too pat. Before the decisions are taken, before subordinate staffs have to answer amazing questions, such as "We have a brigade on the ground, why can't we go NOW?" we must articulate what security policy and preemption really means. Our chief has written that courage is a requirement at the tactical level and it is also an absolute requirement at the operational and strategic levels.

I end with the rejoinder to read Bacevich's book, read other books, and enter the debate. We know the Army is at war. We must participate in articulating the path to victory and the defense of the Republic.

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ARMOR STRONG

The Modern Army Combatives Program

In 1995, identified weaknesses in the martial arts training program of the time led to the formation of a committee of U.S. Army Rangers chartered to build a more effective program. By examining successful martial arts programs around the world, the committee discovered that Russia's successful system of Sombo was developed specifically for the military and combined the techniques of judo and Greco-Roman wrestling. The success of Sombo was linked in its similarity to wrestling, making its basic components easier to learn and less dependent on size and strength. It also had a competitive component designed to spur further training.

Realizing that Sombo instructors would be difficult to find, the committee began looking for a similar system as a base for their program. Finally, after looking at various systems, the Rangers sent several men to train at the Gracie Jiu-Jitsu Academy in Torrance, California.

Brazilian Jiu-Jitsu, as taught at the Gracie Academy, fit almost every aspect of the military's needs. It was easy to learn, had a competitive form, and was proven effective in hand-to-hand combat. It did, however, have some problems; one aspect of Jiu-Jitsu was principally designed for one-on-one arena fighting, and the other, sportive Jiu-Jitsu, was not oriented toward fighting.

With actual combat experience as their guide, the Rangers designed a system using Brazilian Jiu-Jitsu as a technical base and customized it to the needs of the Army. A systematic approach to training emerged, which detailed the techniques that would be taught, and in what order. Rangers would start with the basics of Brazilian Jiu-Jitsu ground fighting, and progress into the throws and takedowns of Judo and wrestling, and the strikes of boxing and Muay Thai. These martial arts elements, combined with weapons training, resulted in a totally integrated system of close quarters combat, which enabled Rangers to transition smoothly between ranges of combat, with or without weapons, individually or as a group.

As Rangers who were trained in this new system spread throughout the Army, the system spread with them. Colonel Michael Ferriter, who had learned of the system while commanding the 3d Ranger Battalion, integrated this program into the programs of instruction at Officer Candidate School, the Infantry Officer Basic Course, and the Infantry Captains Career Course, thus laying the foundation for the Army's train-the-trainer program.

With strong support from the Armor Center's leadership team, the Fort Knox-based combatives program has become a proven success and now includes a tournament that showcases the combative skills of Fort Knox soldiers. These tournaments encourage soldiers to train, provide an opportunity for them to be recognized by their chains of command, and allow commanders to view their unit's ability in close quarters combat.

The Fort Knox combatives tournament, held prior to the 2007 Armor Warfighting Conference on 28 and 29 April 2007, used a graduated set of rules that began with basic ground grappling in the preliminary rounds, consisting of one 6-minute round. The semi-finals rounds used intermediate rules that allowed competitors to use grappling, closed-fist strikes to the body, and opened-hand strikes to the face, and consisted of one 10-minute round. The finals used advanced rules where fighters use mixed martial arts techniques. The final-round fights consisted of three 5-minute rounds graded by a panel of three judges using a 10-point must system.

The next Fort Knox combatives tournament is tentatively scheduled for 15-17 November 2007. The event is open to any unit that would like to compete. The All-Army Tournament is scheduled for 12-14 October 2007 at Fort Benning, Georgia. The All-Army Tournament is similar to Fort Knox's combatives tournament; however, Fort Knox's finals are fought in a cage and Fort Benning's finals are fought in a traditional boxing ring. The Fort Knox tournament provides soldiers an additional venue to showcase their abilities and provides fighters who cannot compete at Fort Benning an opportunity to compete.

The Modern Army Combatives Program awakens the inner warrior in soldiers. Warrior ethos is key to inspiring soldiers to fight and provides them direction using battle focus, which is what makes the Modern Army Combatives Program a successful program. For more information on how to become ARMOR STRONG through the Modern Army Combatives Program, visit the Combatives School website at *https://www.benning.army.mil/combatives.*

What's your story? How do you maintain your fitness? Better yet, how do you maintain your unit's fitness while deployed in a combat zone? *ARMOR* is pleased to present its newest section, ARMOR STRONG. Send us your stories and photos (please keep them in good taste and 300 dpi or better quality). If you have a physical fitness story to tell, we will be glad to print it. With your help, today's tankers and cavalrymen, and those who follow, will remain ARMOR STRONG!

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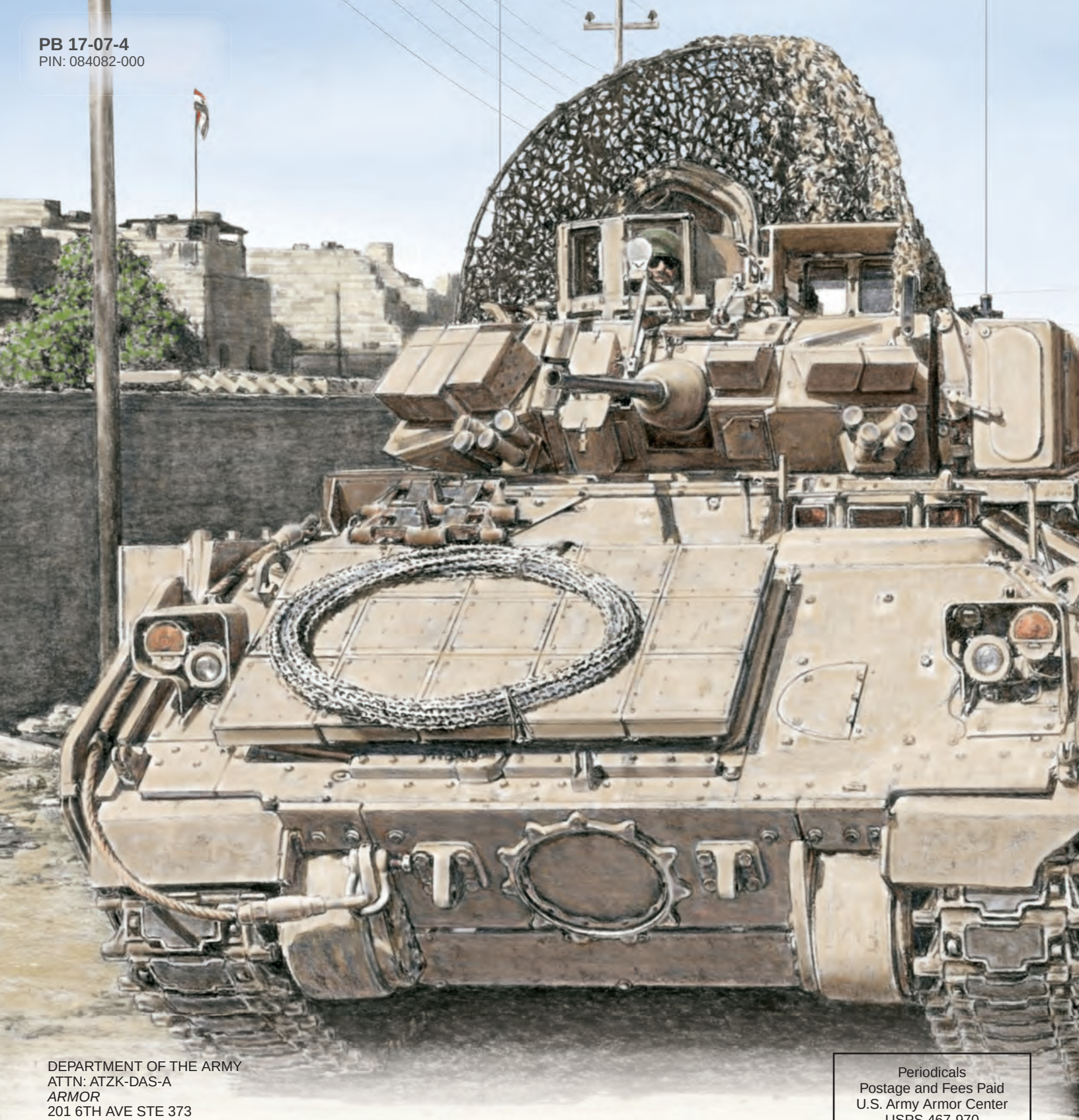

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