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HARMON

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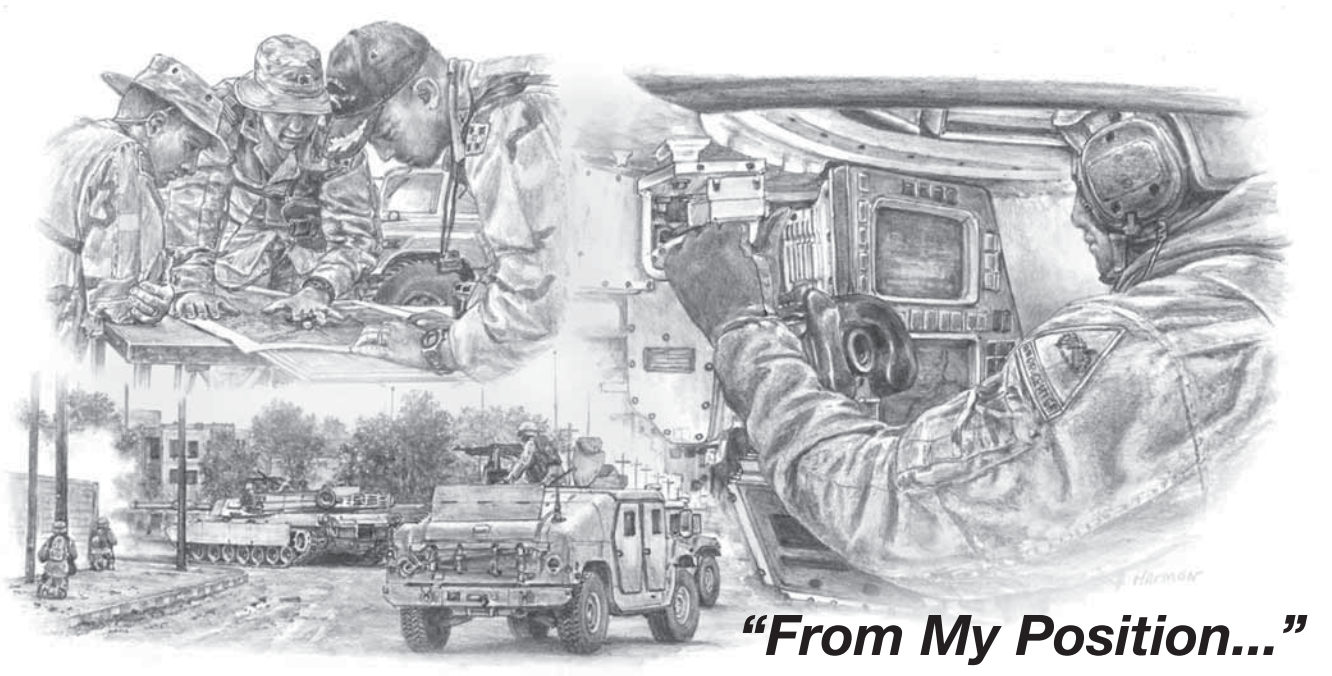

"From My Position..."

In 1888, a group of cavalry officers decided to get together to discuss their profession. The only obstacle preventing them from doing so was the great distance separating them from each other. To overcome this obstacle, they began publishing *The Journal of the U.S. Cavalry Association*, known today as *ARMOR.* More recently, a group of former company commanders got together for similar reasons and harnessed the potential of the internet, creating a website called *CompanyComand.com*.

Although separated by history and technology, these two seemingly dissimilar discussion groups share two similar traits — both are a means to share professional knowledge. More importantly, however, they have both earned outstanding reputations for their candor, insight, and most of all, their independence.

The latest forum for sharing professional knowledge is *Mounted ManeuverNet,* which combines the best characteristics of *ARMOR* and *CompanyCommand.com* to allow its members to quickly learn yesterday's lessons, dominate today's enemies, and win tomorrow's peace.

Unlike *ARMOR, Mounted ManeuverNet* is not limited to 52 pages of text. Additionally, authors who contribute lessons learned or other pieces of hard-earned knowledge will not need to wait two months for feedback from other members. Finally, members can use this free forum from wherever they are located, as long as internet access is available.

After reading about all of the advantages of a web-based professional forum, you may conclude that *ARMOR*'s days are numbered. Nothing could be farther from the truth; in fact, the opposite is true. The discussions that take place on *Mounted ManeuverNet* can easily develop into cutting-edge articles, which will serve to improve the magazine's already outstanding reputation. Similarly, articles found in the magazine can serve as the catalyst for further comment and development on the web. Together, these two professional forums will complement each other while serving to improve courses taught in the training base, preparing Soldiers and units for deployment, and better assisting soldiers already in theater. One way to look at the potential of this forum is to compare it to our recent Armored Warfighting Symposium. The symposium brought together some of the armor force's foremost experts on the current war to exchange ideas for everyone's benefit. By all accounts, the discussions were focused, relevant, and highly useful to everyone in attendance. Although the live, resident portion of the symposium ended on 19 May, *Mounted ManeuverNet* will allow those discussions to continue indefinitely.

The quality of the discussions that take place on this latest professional forum are highly dependent on the willingness of the forum's members to contribute. This site is very new, and the content you may find today will improve over time and eventually take on a life of its own. The best thing you can do to make the forum as useful as possible is to join today. Simply go to *https://leadernetwork.bcks.army.mil*, click on *Mounted ManeuverNet*, and then click on "Become a Member" under the participate section. If you already have Army Knowledge Online access and submit your completed application form, you'll gain access within about 24 hours.

One of the great things about *ARMOR* is that it is portable. After you read this issue of the magazine, you'll probably find more than one article worth taking with you. This edition touches on a variety of issues the force deals with every day. The contributing authors for this issue discuss recommendations for equipping our formations with alternatives to the M1114, organizational change to improve tactical reconnaissance, Army combatives, and the future of Force XXI battle command, brigade and below (FBCB2). This edition will also serve to educate our readers on basic armor theory and improvements to rifle marksmanship training. Once again, this month's magazine has a little bit of everything.

In closing, several of our readers have commented that they would like to see some humor reintroduced into our pages. The magazine's staff is certainly not opposed to doing so, provided we have some humor to include. A little good-natured humor never hurt anyone and current events certainly cry out for a break in routine. If you have a humorous anecdote, cartoon, or article, by all means send it in. Humorous submissions really only have two requirements: they must be in good taste; and most importantly, they must be funny! Until next issue, take care and Forge the Thunderbolt!

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LETTERS

Is the MGS a Very Expensive Up-gunned Recoilless Rifle?

Dear *ARMOR*,

Major Jonathan B. Slater's article, "Introduction to the Stryker Mobile Gun System," in the May-June 2006 publication of *ARMOR* was well worth the wait. A few thoughts and questions that immediately come to mind are:

• Why three vehicles and not four in the MGS platoon? They are supporting two leg platoons; why does one only get one MGS and the other two? Does the concept of "overwatch" or fire and maneuver ring any bells? Or was this decision made and justified based on cost? Whose cost — the soldiers, mission, or the bean counters?

• 18 rounds of main gun ammo is not enough, especially if you have a basic load mix of HEP, HEAT, SABOT, CANISTER, not to mention WILLIE-P. Please, do not try to make it a proverbial "man for all seasons" (you know a jack-of-all-trades, but a master of none — always firing blanks) or give it more big bullets.

• What is the thought process behind the initial issue of the MGS to an armored cavalry regiment (ACR)? I thought the concept was to provide support to infantry squads in the assault phase of an attack mission? At least that is what the major said at the beginning of his article. I'm confused. Why not all to SBCTs? Maybe even right into Iraq, now that's a novel idea?

• What is this new "around corner" firing capability? Trick question? If you mean firing from your flank, say it. There is no line of sight "around corner" firing, yet; sounds a lot like military intelligence to me.

Finally, after paying due homage (way overdue I think) to the altars of safety and earplugs in combat and graphics on maps, it seems to me that Major Slater is telling us that we have ended up with a very expensive up-gunned recoilless rifle, at best. At worst, it will become a replacement for tanks at the troop level in 3d ACR squadrons (why the 2d is going away). Sort of like the Bradley. This is okay by me, as long as they do not screw around with tank commanders in those squadrons!

Great article, Major Slater; mission accomplished; it did exactly what an "introduction" is supposed to do, raise questions and comments. Unless, of course, the conclusion is a fait accompli — it's comforting to know that we never do that in the Army, do we?

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

ROE/RUF: Response to Netherland's Article Misses Point Entirely

Dear *ARMOR*,

I am responding to the letter that appeared in your magazine's May-June 2006 edition, titled "Distinction Must Be Made between the Nature and Purpose of ROE and RUF," written by David Graham of the Judge Advocate General's Legal Center and School, in response to Captain Netherland's article, "21st-Century Rules of Engagement."

Soldiers do not need rules of engagement (ROE)/rules on the use of force (RUF) that are constantly tinkered with by so-called operational law attorneys. Instead, our forces need realistic training on threat identification and response as set forth in Captain Netherland's article describing the ROE/RUF tactical training seminar. Neither Captain Netherland nor I, as course director for the Seminar, advocate training anything outside the doctrinal standard concerning ROE or RUF. Rather, we strongly believe there is a disconnect between current training methodologies and the tactical realities of use of force encounters across the mission spectrum.

Despite a clear mandate set forth in the Chairman of the Joint Chiefs of Staff's Standing Rules of Engagement, Chairman of the Joint Chiefs of Staff Instruction (CJCSI) 3121.01B, para. 1b (13June2005), "Unit commanders at all levels shall ensure that individuals within their respective units understand and are trained on when and how to use force in self-defense" most soldiers, sailors, airmen and Marines are not properly trained on threat recognition and the appropriate immediate tactical response to a hostile act or demonstrated hostile intent. This creates both a heightened risk for friendly forces, as well as a greater likelihood of a legally and tactically inappropriate use of force. Neither option bodes well for mission success.

Many commands turn to legal advisors to draft and implement guidance concerning this area of concern. Sadly, this often does not result in concise rules and better training, but rather in a plethora of ever-tightening, ever-changing, and tactically ridiculous ROE being forced down on our forces. The resultant confusion and hesitation makes us a less effective force, as demonstrated by the following real-world examples:

ECP Guards in the Green Zone. In January 2004, I interviewed five young soldiers performing entry control point (ECP) duty at the Coalition Provisional Authority Headquarters in the green zone in Baghdad. Each soldier, after getting "off duty," was asked the question "when do you believe you can use deadly force?" I received five *different* answers, but the overarching theme of each young soldier was "I don't know, sir, but I do know that I will be in trouble if I fire my weapon." This seeking of affirmation — in other words, is it okay to shoot — is not unusual.

Marines at Fallujah. In Spring 2004, unclassified portions of the ROE designated members of Iraqi insurgency groups as hostile forces that could be engaged at will. Instead of taking advantage of this authority to kill bad guys, many subordinate units, including Marines at Fallujah, layered on overly restrictive ROE. Unbelievably, at the tactical level, one Marine unit was ordered "not to fire unless fired on." In addition to being unnecessarily dangerous and tactically foolish, such guidance was contrary to the authority provided by higher headquarters. Moreover, it was in direct contravention to the Marines' inherent right of self-defense.

Clearing barrels and accidental discharge paranoia. Soldiers returning to most bases in theater — regardless of their age, rank, or level of experience (to include Special Operations Forces) — must remove their safely holstered weapons from the holster, manipulate them in a crowded area, and "clear" (unload) them with barrels pointed into sand-filled clearing barrels. When a weapon does, on occasion, fire into a clearing barrel (isn't that why they have clearing barrels), the command generally crucifies the "guilty" party by issuing career-ending nonjudicial punishment. This panic is so bad that a command sergeant major from a Special Forces unit recently told me that some senior leaders "fake" charging their weapons when they go outside the wire so they can avoid the potential for an accidental discharge on their return to base. There have also been many reports of military members being forced to place strips of colored tape over their magazine wells to visually demonstrate that their weapons are unloaded. A group called the "armed forces" has gradually and consistently developed a fear of weapons that rivals Disney.

These real-world examples are far more compelling than anything one can glean from reading the *New York Times* from the comfort and safety of the schoolhouse. Attempts to put a band-aid on a serious training deficiency by writing more restrictive rules is typical of what one would expect from a corporate lawyer, but it is anathema to the warrior class.

Commanders and soldiers are always looking for simple, direct, and easily applied ROE/RUF that answer their fundamental use of force question, "When can I pull the trigger?" While general guidelines for upper command levels can be set forth in the ROE/RUF in an operations order (OPORD), and even more particularized guidance handed out on ROE cards, the answer to such a question is almost always incident specific and must be based on the split second judgment of individual soldiers on the scene. Such *judgment-based training* is the opposite of the usual *rules-based training* individuals receive in this area. As a further benefit, this judgment-based training in no way degrades traditional force-on-force combat skills, but rather enhances them.

In a world where technology allows four-star commanders to make near real-time tactical decisions from a headquarters thousands of miles away from the conflict, the temptation to substitute their judgment for the judgment of the soldier on the ground is very strong and prevalent. Former U.S. Envoy to Iraq Paul Bremmer's bemoaning that his mission was constantly being tinkered with by Washington's "ten-thousand mile screwdriver" is a systemic problem. When that ten-thousand mile screwdriver attempts to restrict a soldier's judgment and inherent right of self-defense, however, it becomes a deadly serious systemic problem. And the more that lawyers, unskilled and unaware of the tactical dynamics of a deadly force encounter, attempt to substitute their judgment for the soldiers' via restrictive and tactically absurd ROE/RUF guidance, the more deadly the problem becomes.

Captain Netherland should be applauded rather than chastised for his efforts as a warfighter to spread the good and true word about a very successful, as well as legally and tactically

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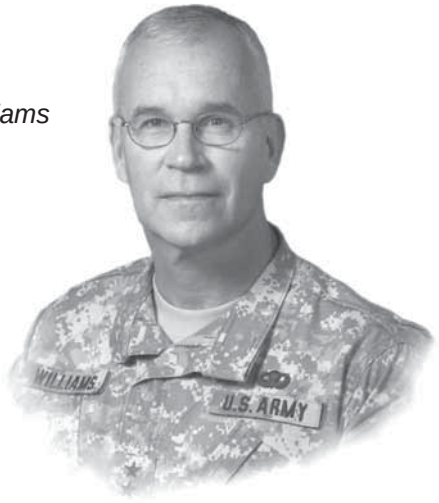
COMMANDER'S HATCH

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



Armor Warfighting Symposium: Looking Forward

As many of you know, the Armor Center recently held the 2006 Armor Warfighting Symposium, and what a great event it was. Our vision for the symposium was to create a forum for our mounted warriors to share their knowledge and experience to the greater benefit of all. After what I saw at the Symposium, I am completely confident that we achieved that vision.

I was particularly pleased with the success of our focused discussion panels. I sat in on a number of these panels throughout the week and was very impressed with both the quantity and quality of dialogue. I have repeatedly said that the Armor Branch's strength is in the standard of excellence of our Soldiers, which was very apparent during these panel discussions.

The Symposium also convinced me that the Armor Center and School remain the intellectual hub of the Armor and Cavalry force and we at the Armor Center have an obligation to maintain that distinction. There are a number of ways to accomplish this, some of which have already been implemented and some that will be implemented in the near future.

First and foremost, it is essential that we maintain our close relationship with the operational force. Current operations have placed an unprecedented requirement on the Army to continually adapt the way we fight. Success in that environment relies on our ability to learn from past successes and mistakes. However, the traditional methods of capturing lessons learned, analyzing their implications, and disseminating the results is too slow. The Armor Center must do its part to streamline that process. We have a number of programs in place to achieve that end. For example, one of these programs sends teams to division and brigade post deployment after-action reviews; and another embeds Armor School instructors, doctrine writers, and combat developers in deployed units.

Our responsibilities do not end with simply capturing lessons learned; as the intellectual hub of the branch, we must also make the lessons available to the operational force. One important development in support of that responsibility is *Mounted ManeuverNet*, which is an online collaborative forum for mounted leaders to share knowledge and experience, much like an internet version of the Armor Warfighting Symposium. While we at the Armor Center maintain the site, the members of the Armor and Cavalry force dictate its content. *Mounted ManeuverNet* has enormous potential to enable leaders to benefit from the experiences of fellow tankers and cavalrymen. I encourage everyone to make maximum use of this asset.

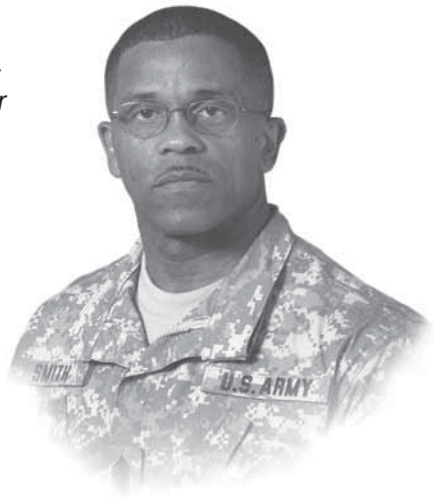
In our role as the home of the Armor School, we must also look at exporting portions of our training. Brigade combat teams face many competing priorities as they prepare for upcoming missions. These teams have requested that the Armor Center send mobile training teams (MTTs) to assist in that preparation. We have already received requests for MTTs for the Scout Leaders Course, the Master Gunners Course, and the 19D and 19K Basic Noncommissioned Officers Course. Many of the leaders I talked with at the Symposium reiterated this need. The challenge for us is to support these brigade combat teams with a limited number of instructors. What I can say is that we will analyze each request, and will support each within our capabilities.

On a final note, the 2006 Armor Warfighting Symposium was a great success and we must make next year's symposium even better. To do so, everyone plays a role; the Armor Center's role is to establish an agenda of important and relevant topics and to invite premier speakers and panel members. For those of you in the operational force, your role is to continue to send your best Soldiers to serve as panel members and Symposium attendees.

Our enemies will not allow themselves to become complacent and neither can we. Activities, such as the Armor Warfighting Symposium, are in integral part of keeping our mounted force prepared for today's operating environment. I am confident that through a combination of Armor Center efforts and the work of the talented Soldiers in the Armor and Cavalry force, we will continue to meet any challenge presented, both now and into the future.

FORGE THE THUNDERBOLT!

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



Excellence in Armor: Developing Future Leaders

The Armor Force faces no greater challenge today than developing leaders and soldiers who can rethink traditional roles and adapt to new missions and organizations. As part of this challenge, we need to evaluate our efforts in terms of the three pillars of training — unit, institution, and self-development. We have already established a strong foundation for unit and institutional training.

However, we must improve in the area of self-development. It is not enough to encourage soldiers to improve themselves on their own initiative. We must produce and promote self-development programs that "grow" Armor and Cavalry soldiers who can meet the demands of the changing Armor Force.

The EIA program identifies outstanding career management field (CMF) 19 soldiers whose performance demonstrates superb leadership potential, both in one station unit training (OSUT) conducted by the 1st Armor Training Brigade, and in cavalry/brigade combat team units Armywide. EIA also applies to CMF 19 soldiers serving in non-Armor units, both active and reserve.

The goals of the EIA program are to identify and develop intelligent, highly motivated Armor and Cavalry soldiers whose performance is consistently outstanding; encourage and facilitate their career progression and growth into noncommissioned officer leaders; and provide incentives, which will lead to retention of these high-quality soldiers. EIA is both an Active and Reserve Component program. Soldiers can be nominated for the EIA program during OSUT at Fort Knox or while assigned to a unit.

During OSUT, soldiers are selected for EIA during week ten of training. Soldiers are recommended by their drill sergeants and selection is confirmed by a battalion-level board, which is chaired by the battalion/squadron command sergeant major. The OSUT soldier's selection is based on performance, motivation, and leadership. An OSUT soldier is not formally enrolled in the program until he graduates.

Unit selection requires the company/troop commander's recommendation. The commander may recommend any soldier, from private to sergeant, to be enrolled in EIA. The battalion/squadron commander must approve all selections. The recommending or approving commander is not required to be an armor officer.

EIA is a win-win program with unlimited potential. It benefits the total armor force by recognizing superior performance and potential, increasing soldier motivation, and identifying soldiers that we need to retain. The EIA Program benefits enrolled soldiers by giving them an edge for early promotion, and early enrollment career courses.

Soldiers enrolled in the EIA program can also earn 50 additional promotion points by successfully passing the tank commander or scout commander competency test level II (TCCT-II/SCCT-II), with a minimum score of 70. To be eligible to take the test, soldiers must be assigned to the recommending unit for at least six months to allow for additional training. The program is designed to afford the best young leaders the training and experience necessary for future leadership positions. Allowing soldiers to test without additional training undermines the EIA program.

An EIA enrolled sergeant who has successfully completed the Basic Noncommissioned Officer's Course and has passed the level II test is potentially qualified for the Master Gunner Course. The Master Gunner Course and the EIA program complement one another — both programs are designed for highly motivated armor soldiers who strive to excel in their profession.

The EIA program will be exceptionally beneficial to soldiers assigned to life cycle managed brigade combat teams. These units will be filled at 100 percent assigned strength; however, grade structure will be underfilled at approximately 67 percent. The program will allow commanders to identify and fill grade structure shortages with EIA soldiers who are capable of performing at the next level.

Command support is the key to implementing and managing a successful EIA program. Commanders should designate one soldier (usually enrolled in EIA) to monitor the unit's EIA program. In many units, the program is monitored by the battalion/squadron master gunner with support from the company master gunners. In other units, the command sergeant major monitors the program with support from the first sergeants, and the master gunners provide technical expertise on EIA training.

All armor/cavalry units should have a formal EIA training program. An EIA training program developed by battalion and company master gunners that supports the unit mission essential task list is an excellent tool to further develop the technical and leadership skills of future leaders and improves unit readiness.

With the SCCT-II, TCCT-II, and the EIA program, the Armor Force has a strong foundation for self-development. We need to continue to improve and promote these programs, actively seeking out those with the technical, tactical, and leadership potential to lead the Army of tomorrow. To learn more about these programs, contact the Office, Chief of Armor, at DSN 464-TANK. I challenge each one of you to play an active role in self-developing your soldiers.

YOUR PRIDE IS SHOWING AND SOMEONE IS WATCHING.

From the Boresight Line:

Master Gunner SME Panel Highlights Challenges Facing Today's Master Gunners

by First Sergeant Robert Hay

The 2006 Armor Warfighting Symposium was a very successful event for the master gunner branch. During the Symposium, the master gunner branch conducted two events, which included a master gunner subject-matter expert (SME) panel and a branch update. More than 60 master gunners from around the force participated in each event.

The SME panel's primary goal was to share knowledge and information with other master gunners and share experiences in both training and current operations. The master gunner SME panel consisted of master gunners from the force who served as company master gunners during Operation Iraqi Freedom. The panel focused its discussion topics around four main areas: pre- and post-deployment training, sustaining gunnery proficiency in Iraq, the master gunner's role in counterinsurgency operations, and the direction of the master gunner's course to stay current. The panel moderator posed each panel member a series of questions in relation to the main topics.

Pre- and Post-deployment Training

Panel members were asked to share their experiences with pre-deployment and post-deployment training. The common ground shared by all panel members was the requirement to be inventive and think outside the box. Most were required to tailor their training tasks to upcoming missions. Some of the concerns arising from these panel discussions highlight that current operational tempo (OPTEMPO) training calendars are compressed, which results in the master gunner being required to thoughtfully plan out a gunnery training plan and make sure it is properly resourced to ensure training is conducted safely and to standard.

Current operations and limited range time are also forcing master gunners to incorporate new and inventive training techniques, as well as develop gunnery training that focuses on mission-dependant scenarios. Tank crewman who deploy on HMMWVs or are dismounted will also require creative training ideas. Speaking with Bradley master gunners or scout platoon sergeants can make this easier.

Sustaining Gunnery Proficiency While Deployed

Most master gunners on the panel agreed that sustaining gunnery proficiency while deployed was one of the most difficult tasks due to the lack of training devices in theater, which led them to develop more unique training ideas. While most agreed that tank crews who conducted patrols and operated on their tanks maintained some tank-specific proficiency, they were still required to develop and incorporate other methods to maintain and sustain proficiency. These methods included tracking boards and manipulation exercises, which are good tools for sustaining proficiency, training new gunners, and cross-training crewmembers. The basic group consensus was not to rely on simulators while deployed. Master gunners have to be inventive and think outside the box to enhance and sustain proficiency within their training plans.

Master Gunner Role in Counterinsurgency Operations

The panel agreed that the master gunner's role at this point is that of an advisor. The master gunner was required to advise his commander on weapons safe firing zones for main gun ammunition, ammunition terminal velocity, and tank weapons system capabilities. All the master gunners agreed the training they received from the Master Gunner Course was invaluable in their role of advising the commander. They also pointed out that they are being required to work with multiple weapons platforms and weapons systems ranging from MK19s to Bradley Fighting Vehicles. Although most have never received direct training on these systems, the knowledge and skills they acquired from the Master Gunner Course enabled them to incorporate these weapons systems into their unit's training.

Master Gunner Course Direction

Finally, the panel discussed the direction that the Master Gunner Course would take to keep pace with current and future operating environments. Most agreed the Master Gunner Course is right on track with its current curriculum. The skills gained from the Master Gunner Course gives master gunners the ability needed to adapt to current missions, be it home station gunnery training, deployment preparation, or conducting counterinsurgency operations in Iraq. Everyone overwhelmingly agreed to maintain the current course standards and program of instruction.

All in all, the master gunner panel was very beneficial. It allowed master gunner's from the field to express concerns and share information. It also highlighted the continued need for unit master gunners. The participants' operational experiences substantiated that the master gunner is unequivocally the "go-to guy" for tank gunnery training.

Finally, I would like to thank everyone who participated on the master gunner panel and attended the master gunner branch update.

Gaining and Maintaining Visual Contact: Replacing the M1114

by Captain Jim Golby

"Red 1, this is Red 2. Checkpoint C311 cleared; executing the Ad Dawr bypass."

"This is Red 1, roger. Blue last cleared the bypass two hours ago. Maintain 360-degree security and continue mission."

"Red 1, Red 2, roger."

"Red 1, Red 3. I recommend we deliberately clear checkpoint C309 to C308 with dis… Contact IED! Small arms west, out."

An explosion erupts between my vehicle and the trail vehicle of the patrol as AK-47 rounds fly errantly overhead. The gunners of the two lead vehicles stand up and scan across the open field to the eastern side of Ad Dawr, attempting to acquire a target. The vehicle commanders twist their heads, straining to identify insurgents through the small, square windows of their HMMWVs. A burst of .50-caliber rounds from the trail HMMWV pierces the air as the driver accelerates through the dust and debris created from the blast.

"Red 3, Red 1, SITREP."

"Red 1, Red 3 …no casualties, no significant damage to the vehicle, break. I thought I had observation of two men with an RPG headed west into the city, but I've lost observation."

Most soldiers and leaders who have recently served in Iraq understand the frustration of similar engagements all too well. Insurgents wearing civilian clothes operating in complex urban terrain have enormous tactical advantages. Destroying these enemies requires soldiers who are outfitted with the proper equipment and are rigorously trained based on sound doctrine.

Doctrinal Background

U.S. Army doctrine clearly emphasizes the importance of surprise and initiative at the tactical level. Surprise is included as both a principle of war and as a characteristic of offensive operations; initiative is classified as one of the tenets of Army operations.[1] Nonetheless, insurgents in Iraq and Afghanistan frequently manage to gain the initiative and achieve tactical surprise through crafty use of patience and concealment. Insurgents consistently use the confusion and hesitation created by an improvised explosive device (IED) or a rocket-propelled grenade (RPG) detonation to drop their weapons, cell phones, or detonation devices and slip unnoticed into a nearby neighborhood or a crowd of civilians, only to return to attack convoys again another day.

Although the line between security and offensive operations becomes increasingly blurred when fighting an insurgency, most route clearance missions or convoy security patrols can be classified primarily as area security operations. Thus, units executing such operations should consider and apply the fundamentals of security operations, which is to provide early and accurate warning, provide reaction time and maneuver space, orient on the force to be secured, perform continuous reconnaissance, and maintain enemy contact.[2] However, friendly convoys in Iraq rarely have any warning until they are already in direct

"The M1114 was designed primarily for an environment where it would be expected to operate on roads due to a far-reaching land mine threat; therefore, the vehicle is inadequate as an off-road vehicle. It loses its ability to move rapidly off-road and must travel extremely slowly on restrictive terrain."

fire contact, they usually have limited reaction time and maneuver space, and often lose contact with the enemy. Is this what Army leaders had in mind when they developed the vision that the modular Army would be able to "see first, understand first, act first, and finish decisively?"[3] Certainly not.

The Army has always emphasized the importance of "winning visual contact." Recent technological developments have allowed Army leaders to envision a "completely new paradigm of how tactical units will fight and win."[4] This new type of combat will be successful because of the "synergy of maneuver, firepower, protection, and leadership, empowered by dominant situational understanding resident in a vibrant information network."[5] Unfortunately, doctrine based on a vibrant information network that allows for maneuver out of contact is extremely difficult to implement when fighting against a non-uniformed insurgency that cannot always be detected by a small number of unmanned aerial systems (UAS) and other surveillance equipment. As a result, insurgents in Iraq and Afghanistan have adapted their methods to negate our ability to win visual contact.

The only way to gain information necessary to "win visual contact" is through the observation of disciplined soldiers who can recognize when something looks suspicious or out of place. In an environment where soldiers cannot identify an insurgent until he makes himself known or raises his weapon, even the most disciplined soldiers cannot always expect to win visual contact. However, they can maintain constant observation and 360-degree security, decreasing their reaction time and possibly preventing an engagement altogether.

According to Army doctrine, "defeating an enemy requires increasing the disparity between friendly and enemy forces by reducing enemy combat power."[6] Enemies of the United States will attempt to exploit any perceived weaknesses in our maneuver, firepower, leadership, protection, and information.

HMMWV Limitations

In the fall of 2004, public outcries to equip soldiers with better body armor and up-armored HMMWVs began when soldiers from the 343d Quartermaster Company from the South Carolina National Guard made headlines for refusing to go on a mission until they had better armor protection. Congress immediately took action to increase funding for up-armored HMMWVs, attempting to rectify the problem as quickly as possible. Between October 2004 and October 2005, the number of U.S. armored vehicles in Iraq rose to almost 39,600 from 16,548.[7] However, from 1 January to 7 October 2005, IEDs killed 302 soldiers, as compared with 165 during the same period in 2004, according to Iraq Coalition Casualty Count, an internet site with statistics based on official U.S. casualty reports.[8] Some of the increase is probably due to larger, more sophisticated IEDs. Regardless, the increase in armor has not translated to a decrease in casualties.

The M1114 up-armored HMMWV has served the U.S. Army well for many years. It has the ability to move very quickly on roads, limited maintenance/logistics requirements, and decent protection for the crew against most threats in a peacekeeping environment. The up-armored HMMWV program initially began as a result of increased peacekeeping efforts throughout various parts of the world, particularly in the Balkans.[9] The Army identified a need for an armored mobile vehicle that provided a high level of ballistic protection against sniper fire and mine blasts. The M1114 filled that role and served well in Bosnia and Kosovo.

The M1114 was designed primarily for an environment where it would be expected to operate on roads due to a far-reaching land mine threat; therefore, the vehicle is inadequate as an off-road vehicle.[10] It loses its ability to move rapidly off-road and must travel extremely slowly on restrictive terrain. Despite this, the M1114 can still continue to serve combat service support units in the future; however, the armor branch needs to acquire a more suitable reconnaissance vehicle that is better-prepared to conduct reconnaissance operations in the current operating environment, as well as into the future. The Army should consider both the German Fennek light reconnaissance vehicle and the M1117 Guardian armored security vehicle.

Fennek Capabilities

The Fennek armed reconnaissance vehicle is the best light reconnaissance vehicle (LRV) on the market. Designed primarily for the German and Dutch armies, the Fennek provides an excellent combination of mobility and observation with adequate protection and firepower for operations across the full spectrum of operations.

The Fennek's observation system consists of a thermal imager, a day vision camera, and a laser rangefinder that can observe out to 8 kilometers while on the move. All three components are mounted in a sensor head on an extendable mast that adjusts azimuth and elevation, reaching to nearly 4.5 feet above the vehicle's roof. The sensor head can also be removed from the vehicle and can be tripod mounted for remote operation up to 40 meters away from the vehicle. The crew can operate the sensor head using a control unit either inside or outside the vehicle if the system is dismounted.[11] The position of the driver's seat allows the driver to see greater than 180 degrees through the front windshield and side windows. Additionally, the vehicle has a

rearview camera mounted at the back of the vehicle and a monitor integrated in the driver's instrument panel to allow the driver to move backward without direction, which also simplifies internal crew communication.[12] The Fennek also has a built-in global positioning system (GPS) that can identify eight-digit grids to the vehicle, direction of movement, and grid locations to targets when combined with the laser rangefinder.[13] The Fennek's observation and surveillance capabilities set it apart from virtually all other light reconnaissance vehicles in production today.

The Fennek runs on a diesel engine that operates for a range of almost 500 miles and a maximum speed of up to 70 miles per hour. The automatic transmission and transfer unit provide selectable four-wheel drive and can negotiate a 60-degree forward slope and 35-degree side slopes, easily outmaneuvering the M1114 HMMWV. The turning radius is 6.3 meters and the fording depth is one meter. The system also has a central tire inflation system that enables the driver to adjust tire pressure while moving, based on terrain conditions.[14] The Fennek provides excellent overall mobility both on and off road, enabling it to be used in various environments.

The Fennek offers an adequate combination of protection and firepower. With its add-on armor, the Fennek offers all-round protection against 7.62mm armor-piercing rounds and protects the crew against anti-personnel mines. The crew compartment is also protected against nuclear, biological, and chemical (NBC) warfare through an integrated NBC protection and air-conditioning system. Additionally, a special exhaust system minimizes the vehicle's infrared signature.

The Fennek has the capability to mount the equivalent of either a .50-caliber machine gun or an MK-19 40mm automatic grenade launcher while maintaining a low profile. Some Dutch versions of the Fennek are also fitted with the Rafael Spike antitank missile. The gun mount is controlled electrically and has a periscope sighting system that can be upgraded with an image intensifier. Most importantly, the Fennek allows the entire crew to operate entirely inside the vehicle with 360-degree observation.[15]

The Fennek does have several significant faults. First, it carries only a three-man crew and does not offer a dismount capability. The Fennek largely relies on its excellent observation systems to allow the crew to conduct most of its reconnaissance from inside the vehicle. Therefore, the Fennek would probably need to operate in conjunction with other reconnaissance systems that are capable of employing dismounted scouts or support vehicles with detainee or enemy prisoner of war (EPW) transport capabilities.

Finally, the Fennek is a German and Dutch vehicle that is not currently in the U.S. inventory. Thus, it would most likely take a significant amount of time to get through the acquisitions process. Nevertheless, the armor branch should look to the Fennek as a model when developing future light reconnaissance systems or when modifying existing platforms.

Photo courtesy Dutch Defence Press/Gerard van Oosbree

"The Fennek armed reconnaissance vehicle is the best light reconnaissance vehicle (LRV) on the market. Designed primarily for the German and Dutch armies, the Fennek provides an excellent combination of mobility and observation with adequate protection and firepower for operations across the full spectrum of operations."

Guardian Capabilities

The M1117 Guardian armored security vehicle (ASV) is a four-wheel drive vehicle with a turret originally designed to meet the security mission requirements of the U.S. Military Police Corps. However, the M1117 offers excellent protection and mobility, combined with good firepower and adequate surveillance capabilities, which allow it to conduct reconnaissance operations in the contemporary operating environment. The armor branch should equip all armor and reconnaissance units currently deployed to Iraq with M1117 Guardian ASVs instead of M1114 up-armored HMMWVs. Subsequently, the armor branch should replace the M1025/1026 HMMWV in heavy brigade combat team reconnaissance squadrons with M1117s.

The M1117 Guardian provides better protection against current threats than either the Fennek LRV or the M1114 HMMWV. The Guardian also offers increased protection against RPG threats. Although the M1117 is not designed to prevent RPG penetration, its angled armor decreases RPG effectiveness.[16] Similar to the Fennek, the system also has a central tire inflation system that enables the driver to adjust tire pressure while moving.

The increased protection of the M1117, combined with a fully enclosed turret and 360-degree observation from inside the vehicle, greatly increases the crew's ability to rapidly and effectively engage targets. The Guardian is equipped with the dependable firepower provided by the Cadillac Gage™ up-gunned weapons station, consisting of an MK-19 40mm grenade launcher and .50-caliber machine gun. The turret's protected feed chute provides the gunner with the ability to reload and clear stoppages under armor protection for both weapons systems. Although the gun systems are not stabilized, the M-36 day/night gunner's sight still offers the ability to return rapid, effective fire against an enemy while conducting reconnaissance operations.[17]

The M1117 offers adequate mobility through various types of terrain. Rugged 14.00 R20XZL tires allow the Guardian to operate effectively on or off road. The special-run flat tires, with a central tire inflation system, offer the crew added mobility under fire. Its ability to reach maximum speeds in excess of 63 miles per hour will allow the Guardian to keep up with virtually

any convoy. Its width of less than eight feet and turning radius of 8.3 meters allow it to effectively operate in urban terrain while its ability to climb a 60-degree gradient or 30-degree side slopes make it an effective vehicle maneuvering in restrictive terrain.[18] The M1117 Guardian offers sufficient mobility to conduct full-spectrum reconnaissance and security operations.

Although the M1117 Guardian would be beneficial as a reconnaissance platform, there are several disadvantages. First, the Guardian is larger than either the Fennek or the M1114, with a height of 8.5 feet and a length of approximately 19 feet.[19] Additionally, the Guardian has several observation limitations; it does not have a rear camera for the driver or any long-range surveillance (LRS)-equipped systems. These modifications should be relatively easy to make and should be considered as part of an upgrade process prior to fielding.

Finally, the Guardian only carries one dismount per vehicle with a total crew of four personnel. Dismounting the vehicle is also slower than on the M1114. Nevertheless, the Guardian is an excellent armored vehicle already in the Army's inventory that provides better protection and surveillance than the M1114 HMMWV. Thus, the armor branch should begin to acquire M1117 Guardians instead of M1114 up-armored HMMWVs.

The M1114 up-armored HMMWV is no longer an adequate platform from which to conduct reconnaissance operations. Although it was a wonderful stop-gap measure to meet the needs of the Army during the initial phases of deployments to the Balkans, it simply is not the right long-term solution for our scouts. As we attempt to transform to a modular force that will "see first, understand first, act first, and finish decisively," we cannot allow the limitations of our equipment to drive our doctrine when better equipment is available. Although the M1117 Guardian has several weaknesses, it is currently the best wheeled armored vehicle available to replace the M1114 up-armored HMMWV. The M1117 Guardian provides adequate protection and surveillance to allow reconnaissance units to win visual contact and quickly respond to insurgent attacks with rapid, effective fire.

Armor branch must continue to aggressively push to develop a reconnaissance vehicle that will allow it to successfully conduct full-spectrum reconnaissance operations. With no peer competitor, the U.S. Army should expect to be involved in more low-intensity conflicts over the next 15 to 20 years. Thus, there will continue to be a need for cavalry soldiers who can conduct reconnaissance and security operations in complex urban environments while still retaining the capability to fight effectively in high-intensity operations. Armor branch should immediately begin to develop a light reconnaissance vehicle similar to the German Fennek, but with an increased dismount capability. In the interim, the Armor branch needs to equip its reconnaissance units with M1117 Guardian ASVs instead of M1114 HMMWVs. Soldiers' lives depend on it.

Notes

[1]U.S. Army Field Manual (FM) 3-0, *Operations*, U.S. Government Printing Office (GPO), Washington D.C., 14 June 2001, p. 4-3.

[2]FM 3-90, *Tactics*, GPO, Washington D.C., 4 July 2001, p. 12-2.

[3]Training and Doctrine Command (TRADOC) Pamphlet 525-3-90, Objective Force Maneuver Units of Action, accessed online at *http://www-tradoc.army.mil*, 28 November 2005.

[4]Ibid.

[5]Ibid.

[6]FM 3-0, p. 4-3.

[7]Tony Capaccio, "More U.S. Troops Die in Iraq Bombings Even as Armoring Improves," Bloomberg Online, at *www.bloomberg.com/apps/news?pid=10000103&sid=aftH7bcepI8I&refer=us*, on 13 October 2005.

[8]Ibid.

[9]Global Security, "M1114/XM1114 HMMWV Up-armored Armament Carrier," at *http://www.globalsecurity.org/military/systems/ground/m1114.htm*, 14 November 2005.

[10]Ibid.

[11]Army-Technology Online, "Army-Technology: Fennek," at *http://www.army-technology.com/projects/fennek*, 16 October 2005.

[12]Ibid.

[13]Ibid.

[14]Ibid.

[15]Ibid.

[16]Textron Incorporated Online, "Textron Marine and Land//Textron Systems: ASV Specifications," at *http://www.systems.textron.com*, 16 November 2005.

[17]Ibid.

[18]Ibid.

[19]Ibid.

"The increased protection of the M1117, combined with a fully enclosed turret and 360-degree observation from inside the vehicle, greatly increases the crew's ability to rapidly and effectively engage targets. The Guardian is equipped with the dependable firepower provided by the Cadillac Gage™ up-gunned weapons station, consisting of an MK-19 40mm grenade launcher and .50-caliber machine gun."

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Death Before Dismount: A Relic

by Captain Irvin W. Oliver Jr.

Operations in Bosnia, Kosovo, and Iraq have seen the deployment of armored forces well prepared for high-intensity operations against national armies transition to mid-intensity operations against irregular insurgent forces. Once high-intensity operations subsided, the role of large armored forces changed, requiring additional skills and formations not typical to the armor community.

The current operating environment requires the U.S. Army's armored formations to reorganize to conduct credible dismounted operations. As any given conflict or operational deployment transitions to mid- and low-intensity levels, the utility of heavy armor lessens, but never completely goes away; the practicality of armored vehicles also decreases as the intensity of conflict decreases.

My own experiences in Kosovo and Iraq have solidified in my mind the need for additional training and flexibility in the armor community and the Army as a whole. Many of these changes are currently occurring during initial entry training (IET) with the increase in dismounted training for individual soldiers and at the unit level; however, Army operations in the Balkans and current operations in Iraq illustrate a need for dismounted training from the company level to crew level.

As a tank platoon leader in Kosovo, my platoon conducted numerous dismounted patrols and HMMWV-mounted patrols in rural urban environments, as well as surrounding wooded areas. The use of our M1A1s was minimal and usually only for large-scale operations or power projection. With some training and equipment additions, we were a credible force for the ongoing stability and peacekeeping operations.

The platoon regularly had combat service support (CSS) soldiers from the support battalion attached for extra manpower, as well as interpreters to communicate with local nationals. Additional personnel allowed us to execute missions normally conducted by larger infantry platoons. Additional equipment, such as the M240 machine gun ground mount kits and single channel ground and airborne radio system (SINCGARS) manpack kits, enabled our squad-sized patrols and platoon quick reaction forces (QRFs) to handle most situations they were likely to face. The biggest shortfall was the lack of training in urban operation and dismounted tactics that our patrols had to execute daily.

During initial operations in Iraq, our tank company conducted dismounted reconnaissance operations and traditional light infantry tasks, such as raids, ambushes, and cordons and searches. Due to the quickly changing battlefield, our task force planning and rehearsals focused mostly on high-intensity operations with limited emphasis on counterinsurgency. Once we saw the high-intensity phase of the conflict end with the seizure of Baghdad, we began to focus and train on stability and support operations.

While this did prepare us for some of our required tasks, it did not train soldiers, company and below, on the tactics need-

"During initial operations in Iraq, our tank company conducted dismounted reconnaissance operations and traditional light infantry tasks, such as raids, ambushes, and cordons and searches. Due to the quickly changing battlefield, our task force planning and rehearsals focused mostly on high-intensity operations with limited emphasis on counterinsurgency."

ed for mid-intensity urban operations. The training we received prior to deployment was better tailored to current operations than to operations conducted during 2002 and 2003. However, that training had to compete with everything else we were doing in preparation for deployment, so we were unable to get as many repetitions as we would have preferred. Had there been a plan to effectively and credibly reform into provisional rifle companies (PRC) and train as a PRC, operations in both places would have been much easier and would have provided commanders and staffs added flexibility in planning and executing mid-intensity operations.

With some modifications and additions, the weapons and equipment organic to armor formations enable them to conduct modified dismounted operations tailored for the mid-intensity operational spectrum.[1] To conduct mid-intensity operations effectively, the tank company would request the following additional equipment be added to its modified table of organization and equipment (MTOE) to more effectively conduct infantry operations:

- 28 M240 dismount kits
- 24 M4 carbines
- 28 M203 grenade launchers
- 6 M12 combat shotguns
- 57 PEQ2A, PVS-7/14
- 114 CCO/reflex sight
- 28 M145 machine gun optics
- 8 PAS-13 thermal weapons sights
- 7 bore lights
- 14 SINCGARS/ASIP manpacks

While a tank company lacks the M249 squad automatic weapon (SAW) organic to infantry companies, the additional M240s will more than make up this shortage. However, employment considerations may differ due to the weight and additional amount of weapons in the platoons and company. Adding other weapons systems, such as the M203 grenade launcher and the M12 combat shotguns with its lethal and nonlethal munitions and thermal weapons sights, to the MTOE will enable the provisional dismounted squads to act more independently than the current MTOE allows.

The additional equipment will provide improved target acquisition, communications, and firepower to the squad. During high-intensity operations, all rifle allocations should be for the M4 carbine. Additional rifles and M203s take up added space in the crew's storage area and crews will not have space for other required equipment. The M4 is also a better fit for HMMWV-mounted operations and room/building clearing missions as the M4 allows more mobility in confined spaces.

With 28 SINCGARS radios, the tank company has more than enough FM radios available to equip all squads and have enough remaining to outfit a company command post or tactical operations center (TOC).[2] The tank company simply requires conversion kits to make the radios available for dismounted operations. If the tank company has HMMWVs in addition to its tanks, there will not be enough radios for all vehicles and squads. However, with solid mission, enemy, terrain, troops, time, and civilian (METT-TC) analysis, the number of radios is not an operational constraint. If possible, adding PRC-127 lightweight radios or the multiband inter/intra-team radios, versus the regular SINCGARS radios, would reduce weight and simplify user issues common to the standard SINCGARS.

A typical airborne infantry company is authorized 133 soldiers (6 officers, 127 enlisted members). This includes a nine-man weapons squad and a six-man 60-mm mortar section.[3] A provisional rifle company would include 114 soldiers (5 officers, 109 enlisted members), but would lack the weapons squad and mortar section. The "legacy" airborne infantry company is used as an example because the nine-man squad foundation has proven to be effective in recent operations in Iraq and Afghanistan, and because the nine-man squad would be easier to implement, even though an 11- or 13-man squad is preferable.[4]

Much like the airborne infantry company, the provisional rifle company organization is built on a nine-man infantry squad. Because the provisional company lacks organic mortars and a weapons squad, the platoon headquarters includes two additional M240B machine guns; all eight of the tank platoon's M240s are in-

cluded in the provisional platoon's organization. If the provisional platoon receives additional weapons, such as the Javelin antitank weapon, the platoon headquarters would provide soldiers to man the added weapons, unless they are task organized to the squads. Regular riflemen could also double as Javelin gunners, depending on the situation.[5] Figures 1 and 2 compare the organization of the provisional rifle company and the airborne or light infantry company.

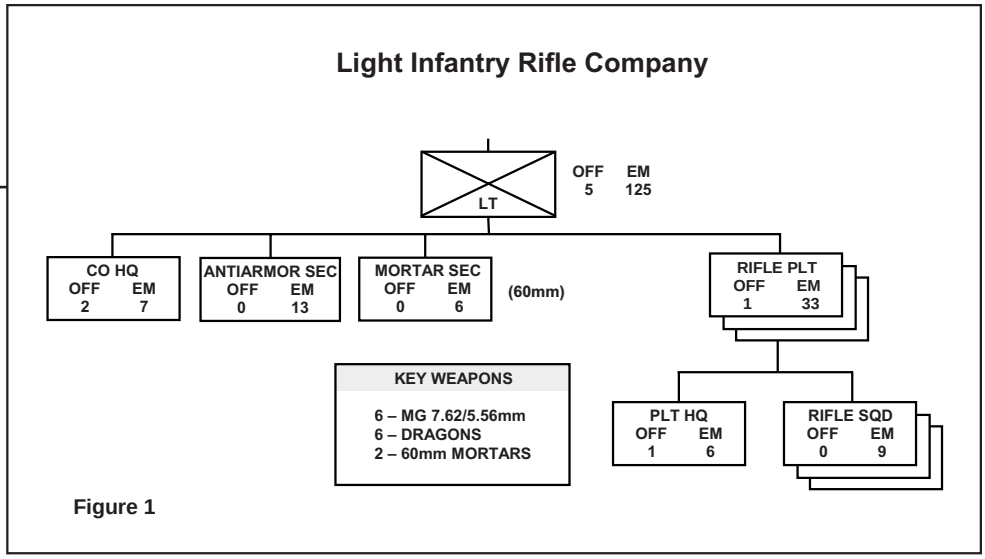

Figure 1

The capabilities and limitations of the provisional infantry unit and a conventional light infantry unit are very similar. The biggest differences would most likely be in the execution of small-unit operations — the provisional infantry unit would require additional training before operational deployment because infantry operations are not the primary focus during most of the training year.

When designing the provisional rifle company, it is important to remember that having a fewer number of soldiers in armor formations will limit those formations' abilities to conduct large-scale infantry operations; the lack of a weapons squad at the platoon level and no organic mortars at the company level will drive planners to consider the best way the mitigate these disparities. However, a tank company or battalion that is transformed into a provisional rifle unit should also have additional medical and fire support augmentation similar to its light infantry sibling.

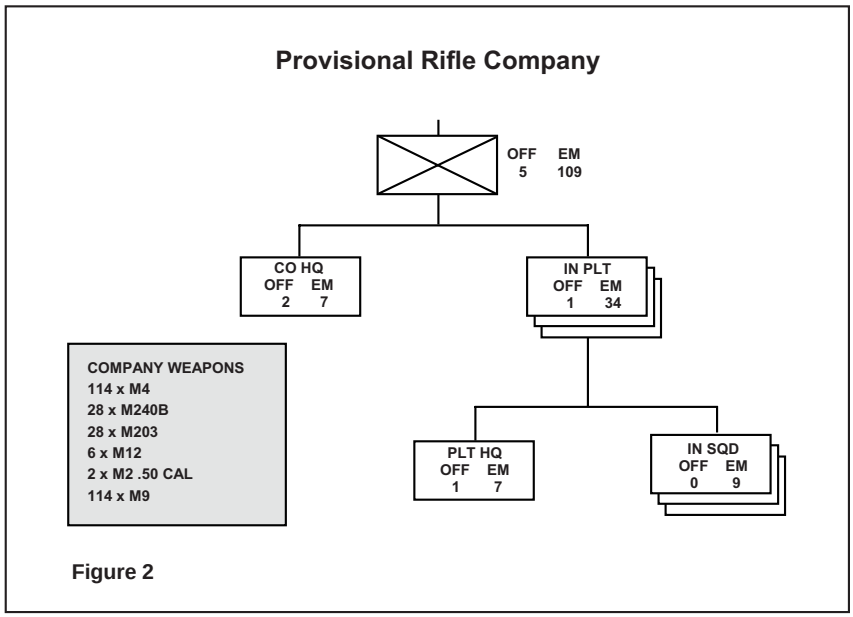

Figure 2

Due to the nature of the contemporary operational environment (COE), the armor community should integrate light infantry training into its normal training schedule with the same emphasis and priority as gunnery or a combat training center (CTC) rotation. The likelihood of a tank battalion finding itself on a short-notice deployment to a war zone with a minimum number of tanks and missions requiring light infantry skills is very high. Common armor unit training schedules will require extensive modifications to develop proficient dismounted infantrymen capable of short-notice deployment. This type of training will require armor units to add additional mission essential task list (METL) tasks and train these new tasks regularly. These new METL tasks will require as much focus as gunnery and mounted maneuver training events. Because these tasks are not the day-to-day norm for typical armor units, dismounted infantry training should culminate with a certification asserting the armor unit's ability to effectively conduct operations. The typical annual training calendar for a combined arms battalion focuses on three major training events: two gunneries and a CTC rotation. If the battalion is aware of its deployment to an operational theater, it will conduct a train-up relative to the tasks it expects to conduct during the deployment. Often times, these different training events are combined or overlap, and dismounted training should be no different. However, instead of training in preparation for a known deployment, the armor community should plan and conduct light infantry training during annual training cycles to maintain a fundamental proficiency in these skills so short- or no-notice deployments do not catch the unit unprepared, forcing it to conduct an arduous, hastily planned training schedule.

One quarter of each year will be dedicated to light infantry training with maintenance- and vehicle-related business being economies of force. With vehicle maintenance taking a backseat to light infantry training, the time available for other peripheral training is increased. The battalion would be able to conduct two physical training sessions five days a week, advanced rifle marksmanship, and many other relevant training events common to the infantry community. The METL would also require revision to accommodate the provisional rifle unit mission. Some proposed METL additions include conduct route reconnaissance; reconnoiter a built-up area; conduct a cordon and search in a built-up area; conduct a raid; conduct an ambush; conduct an attack of a built-up area; conduct convoy escort;

conduct patrol operations; conduct security operations in a stability environment; conduct tactical movement in a built-up area; control civil disturbance; defend in an urban environment; establish a base camp; establish checkpoints and/or roadblocks; react to snipers; secure routes; conduct operations with armored or mechanized infantry vehicles in an urban environment; handle enemy prisoners of war; process captured documents and equipment; and secure civilians during operations.

The above METL tasks are primary tasks for operating in a mid-intensity environment and are a good start to an effective training plan. The tasks listed have some overlap with tasks the armor community already trains on, but are included because they are different enough that when a company executes them dismounted, they would require more attention. For high-intensity operations, the full light infantry company METL tasks would need to be training topics.

During training, particularly during CTC training and deployment, light infantry operations should be an essential element of training. A possible training exercise would begin with a high-intensity combat operation. On mission completion or seizure of an objective, the training unit would execute missions necessary to maintain order in an urban area, such as establishing traffic control points, convoy security, raids, and cordon and searches. This model, although current in Iraq, will be relevant in future conflicts because the U.S. Army will always have to secure the ground it seizes.

At the end of the light infantry training quarter, the tank companies' training would end in a certification exercise, confirming their ability to execute the new tasks and providing one last major training event to prepare for operational deployment. The required changes to the battalion's training cycle will force the battalion to adjust other events that will occur outside of the light infantry quarter. This way, a minimum of one quarter of each training year will be specifically set aside for new training tasks. An added benefit of a light infantry training quarter is that it will set aside time every year to train and maintain other critical tasks, such as common task testing and the combat lifesaver course, as well as advanced rifle marksmanship, close quarters battle training, and reflexive firing for all soldiers. All soldiers could participate in these training events because light infantry training is low cost when compared to tank-mounted training, which is an inherent money-saving opportunity.

The global environment in which we live requires the U.S. Army to be more flexible and agile during its operations. Since Operation Desert Storm, the world has witnessed the armored force's ability to win and win decisively. Those same armored forces lose some functionality once conflict moves from high intensity to mid-intensity, counterinsurgency, and stability and reconstruction operations. While we must always be prepared to fight and win the nation's wars, we must also remain relevant by maintaining utility in all situations and environments. Reorganizing tank companies as provisional infantry companies will create that utility and flexibility.

Armor companies within the new MTOE would form provisional rifle companies with some augmentation from their typical attachments, such as the combat recovery teams and mechanized infantry platoon. The company would reorganize the remaining two tank platoons into squad-based elements, capable of conducting required missions. Task-organizing provides the infantrymen in the company the added benefit of training and sustaining infantry skills the 19Ks have, as well as building on those skills to provide the company the capability of conducting more complex tasks. Our company organization had 24 men in each tank platoon — the equivalent of three eight-man squads (six four-man teams). These teams also had the capability to fully man the unit's 15 M1114 HMMWVs and still put boots on the ground.

"Death before dismount" is an outdated relic of history and the armor force has to adjust.

"During high-intensity operations, all rifle allocations should be for the M4 carbine. Additional rifles and M203s take up added space in the crew's storage area and crews will not have space for other required equipment. The M4 is also a better fit for HMMWV-mounted operations and room/building clearing missions as the M4 allows more mobility in confined spaces."

Notes

[1]23d Armor Division, Table of Organization and Equipment (LCD with FXXI and IBCT Annexes), Fort Knox, KY, 2003.

[2]Ibid.

[3]U.S. Army Field Manual (FM) 7-10, *The Infantry Rifle Company*, U.S. Government Printing Office, Washington, D.C., 14 December 1990.

[4]Claim is made using analysis of various after-action reviews from Operations Iraqi and Enduring Freedom.

[5]Headquarters, Department of the Army G3, Unit of Action Briefing, 5 February 2004.

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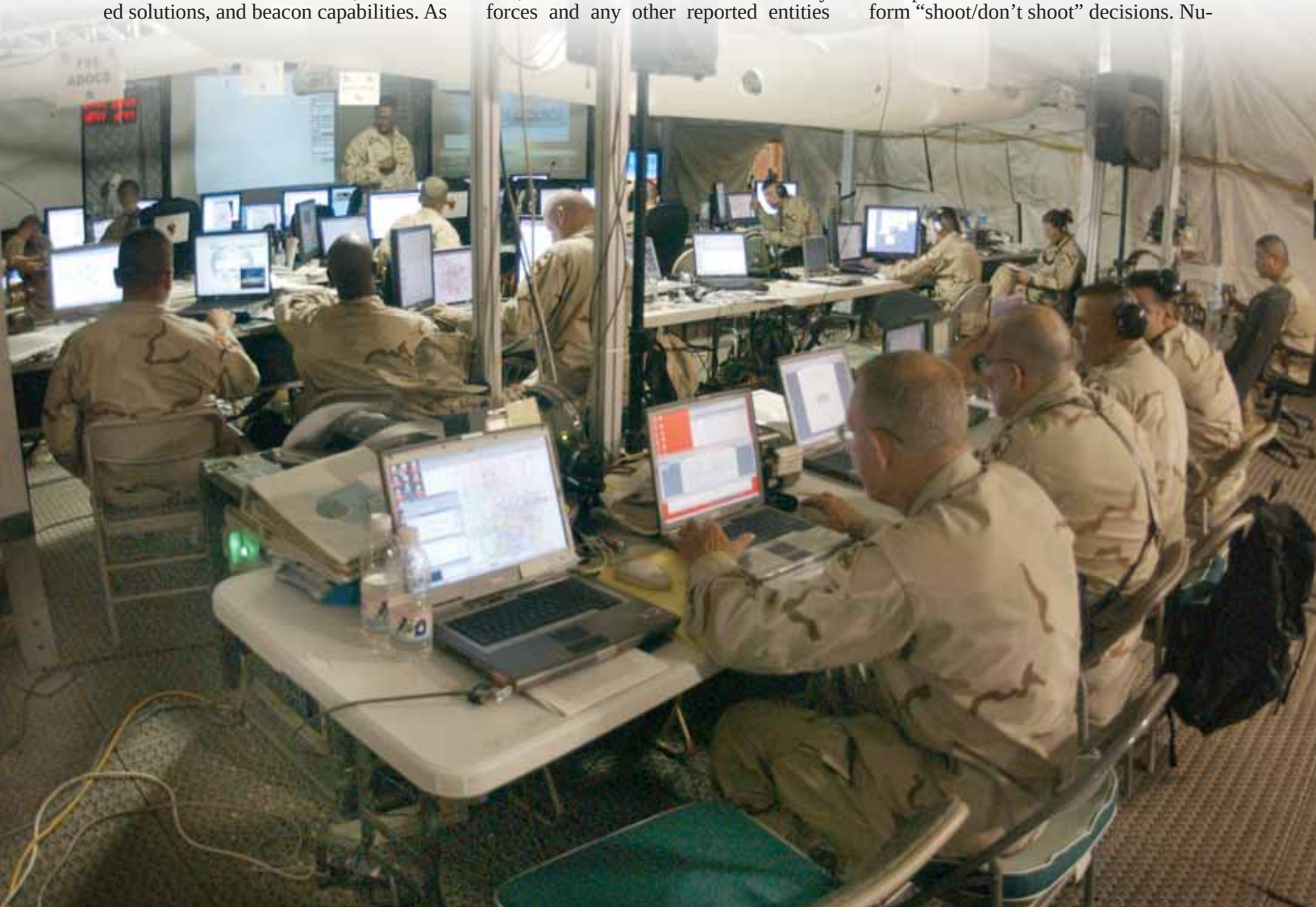
FBCB2: Past, Present, and Future

by Captain Shane Robb

In the mid-1990s, when Force XXI was the "in vogue" name for the Army's future force, one of its primary components was Force XXI battle command brigade and below, better known as FBCB2. At the time, FBCB2 was still an emerging technology with plenty of room for improvement. Through recent experimentations and use in combat, the system has continued to improve and is currently undergoing major system redesigns, to include a new version of software called FBCB2–joint capabilities release (JCR). FBCB2-JCR will vastly improve the system, overcoming many of the shortfalls of the previous version. JCR will provide the foundation for the U.S. Army and Marine Corps to converge fully on a single common FBCB2-based system for platform battle command called joint battle command–platform (JBC-P). JBC-P will meet joint command and control and situational awareness (C2/SA) requirements and will include new hardware, dismounted solutions, and beacon capabilities. As FBCB2 evolves into FBCB2-JCR, and later JBC-P, it will get better, becoming more user friendly with greater capabilities.

When FBCB2 was fielded in the mid-1990s, it was heralded for its capabilities. FBCB2 combined global positioning satellite (GPS) capabilities, computers, and tactical radio-based networks, allowing soldiers to communicate horizontally (between platforms) and vertically (to tactical operations centers) to automatically share their position reports on a common operational picture. For the first time ever at the platform (vehicle) level, FBCB2 provided a very accurate near real-time graphic depiction or "picture" of the current situation. A tank or Bradley commander could actually see his vehicle's icon projected onto a digital map (or satellite imagery), as well as the icons of other FBCB2-equipped vehicles, which revealed locations of friendly forces and any other reported entities (enemy, friendly, neutral, or unknown). Additionally, any obstacles that were reported via FBCB2 were displayed on the map as well. FBCB2 provided a means for commanders and leaders to maneuver and direct forces faster and more efficiently than ever before. The capabilities FBCB2 provided to the force were a giant leap ahead for the Army and earned the praise of those familiar with its abilities.

Units equipped with FBCB2 enjoy tremendous advantages over units without it. Unit situational awareness (SA) has improved exponentially to levels unachievable just 10 years earlier. Knowledge of SA facilitates better situational understanding and decisionmaking. FBCB2 enables commanders and leaders to command and control units more efficiently and effectively and adapt more quickly than the enemy — in short, it enables battle command. FBCB2 has also served as an input for combat identification to inform "shoot/don't shoot" decisions. Nu-



merous reports from Operations Iraqi and Enduring Freedom indicate that many lives on the battlefield were saved using FBCB2 to help prevent fratricide incidents.

FBCB2 serves as the C2/SA link between platforms and the C2/SA systems located in operations centers at all levels. On 7 April 2003, during Operation Iraqi Freedom, senior leaders at the Pentagon watched in near real-time the advance of 2d Brigade Combat Team, 3d Infantry Division as they drove into Baghdad. Never before had such an accurate picture of reality on the ground been available at all levels of command simultaneously. Its significance is summed up by this statement from the 3d Infantry Division's Operation Iraqi Freedom after-action report written in May 2003: "The single most successful C2 system fielded for Operation Iraqi Freedom was the Force XXI battle command brigade and below – blue force tracking (FBCB2–BFT) system. It is important to mention that the FBCB2 system used during this operation was not fielded to facilitate division command and control, but rather to facilitate tracking of friendly forces at echelons above division. Even so, BFT gave commanders situational understanding that was unprecedented in any other conflict in history."

"When FBCB2 was fielded in the mid-1990s, it was heralded for its capabilities. FBCB2 combined global positioning satellite (GPS) capabilities, computers, and tactical radio-based networks, allowing soldiers to communicate horizontally (between platforms) and vertically (to tactical operations centers) to automatically share their position reports on a common operational picture."

FBCB2 has evolved considerably since its introduction. There are currently two primary variations of FBCB2, which use the same software and hardware, but rely on different networks and radios. The first variation, FBCB2-enhanced position locating and reporting system (EPLRS), uses a terrestrial-based (line-of-sight radio) network that harnesses the ability of EPLRS radios to transmit secure data in a tactical environment. The other variation, FBCB2-BFT, commonly referred to as blue force tracker (BFT), uses a celestial-based (commercial L-band satellite communications) network.

Each variation has unique advantages and disadvantages. The terrestrial-based FBCB2 provides more bandwidth than BFT and a faster update rate that allows a more accurate report on the positions of moving platforms. Also, the terrestrial variation supports type-I encryption and allows secret information to pass over the network. However, it suffers from reliance on a network whose architecture is based on task organization. Position reports (which are the basis of SA) pass up and down through the hierarchy of networks and servers. Such networks and services are complex to plan, but most significantly, they require reconfiguration when a new unit task organization is ordered, because of their linkage to hierarchy. Although mainly automated, such a reconfiguration of networks and services is complex to manage, yet critical to the successful operation of FBCB2.

In contrast, FBCB2-BFT's celestial-based network is basically plug and play. The operator is not limited by task organization or non-operational servers. Simply turning on the system will allow operators to see icons. It is not reliant on other FBCB2s to act as servers; because FBCB2-BFT uses a celestial network, it can provide beyond line-of-sight communications over great distances. The primary limitations with FBCB2-BFT are due to limited bandwidth. Moving platform accuracy can be off as much as 800 meters because of FBCB2-BFT's slower update rates (once every 5 minutes, or if moving, every 800 meters, whichever is sooner). The transmission of large messages, such as graphics, is sometimes unreliable because of the limited bandwidth available.

Another limitation learned during Operations Iraqi and Enduring Freedom was many of the numerous service-specific C2/SA systems are not interoperable because of different data standards, protocols, security domains, and network architectures implemented by each separate service. This major deficiency adversely affects the ability of joint warfighters to achieve information dominance in their joint areas of operation. This lack of platform level interoperability prevents sharing vital friendly, enemy, and other survivability information and increases the risk of inter-service fratricide. More to the point, the Marine Corps' system could not see the Army; the Army's system could not see the Marine Corps'; and even within services, there were various incompatible C2/SA systems that could not share information.

The Joint Requirements Oversight Council (JROC) recognized the capability gap that incompatible service-specific C2/SA systems presented and issued a memorandum in August 2003, directing a convergence among the joint community to "a single joint capability." A year later, after an exhaustive study and brief back to the JROC regarding the convergence, JROC directed that "the Marine Corps will adopt Force XXI battle command brigade and below (FBCB2) for both platforms and dismounted applications." In short, General Pace (who at the time was the Vice Chairman of the Joint Chiefs of Staff) directed that FBCB2 would be the joint C2/SA system at platform and dismounted levels for both the U.S. Army and Marine Corps.

As a result of that directive, the Program Manager (PM) FBCB2 began developing an interim joint system (FBCB2-JCR). In parallel, the U.S. Army Training and Doctrine Command (TRADOC) Capability Manager (TCM) for platform battle command and combat identification began the extensive process of capturing and documenting joint C2/SA requirements for a new joint battle command-platform system that would meet the requirements of the Marine Corps, Army, Special Operations Forces, aviation, and other various components within the joint force.

FBCB2-JCR is the interim joint system under development by PM FBCB2 and Marine Corps Systems Command (MARCORPSYSCOM). It is currently scheduled to begin testing in October 2006 and will address many of the interoperability gaps identified in Operations Iraqi and Enduring Freedom.

There are three primary development efforts of FBCB2-JCR, which include network, database, and software. Using existing FBCB2 hardware, FBCB2-JCR will redesign the terrestrial network to take advantage of new radios and higher bandwidth at battalion level. This will divorce the network from the existing unit hierarchy. Instead, FBCB2-JCR will support "communities" of users connected to higher bandwidth networks and

systems via FBCB2 gateway services at one of many tactical services gateways (TSGs). The network will be area based, rather than task-organization based and will work similar to a cell phone network. With this architecture, a platoon leader is not limited to specific servers within the unit; systems will automatically connect to any TSG on the battlefield. This TSG could be from an adjacent unit or even from a different service (Marine Corps or Army). When the system is on, the nearest TSG will pick it up and begin to act as its server. The vehicle's FBCB2-JCR will transition from TSG to TSG as it moves across the battlefield. The TSGs will tie the FBCB2 net into the higher bandwidth networks available at the battalion level via joint network node (JNN), joint enhanced core communications system (JECCS), command and control on-the-move network, digital over-the-horizon relay (CONDOR), or the warfighter information network–tactical (WIN-T).

The lower tier of the network will be based on EPLRS (11x), which provides greater bandwidth than earlier versions and a limited number of single channel ground to air radio system (SINCGARS). As joint tactical radio system (JTRS) radios become available, they will also be incorporated into the network. FBCB2-JCR will also enhance the celestial network by improving the bandwidth available, which will speed communications, increase update rates, and increase position location accuracy for celestial systems.

The database is inadequate for the existing system. As currently configured, the database for the Army and Marine Corps is burned onto each FBCB2 hard drive, causing the development of database products to take up to three months. Once the database is updated, it is loaded onto each hard drive, requiring each system's hard drive to be physically touched. FBCB2-JCR will greatly improve the database process by initially loading a small (unit sized) and more simplified database on each hard drive. The system would then "learn" the rest of the database as it receives information from other users on the net. FBCB2-JCR will eliminate the need to create a massive database that must be updated and copied onto every hard drive. It will also enable much more flexible use of FBCB2 by the user, and the system will automatically and dynamically update the database on each box via a small amount of system information shared across the network.

FBCB2-JCR will rewrite the FBCB2 software to comply with direction received from the Carnegie Mellon Software Engineering Institute, making it more modular and reusable. This supports creating other battle command products that could reuse the core software components of FBCB2-JCR and add new software components for new product-specific functionality.

Perhaps the most important improvement is interoperability. FBCB2-JCR will begin fielding to both the U.S. Army and Marine Corps in 2007, and will increase compatibility with other C2/SA systems across the joint force. This will improve the combined operational picture at all levels, help reduce the risk of fratricide, and enable battle command.

As early as 2008, JBC-P, the new variation of FBCB2-JCR, will begin to be fielded. JBC-P is the family of hardware and software products generated by combining the requirements of the joint community and lessons learned in recent combat operations to build an improved joint FBCB2 system. JBC-P will greatly improve on FBCB2 and replace it as the cornerstone of the joint blue force situational awareness (JBFSA) capability envisioned to support the joint warfighter. Specifically, it will provide the joint warfighter unprecedented C2 and SA capability and enable them to achieve the informational and situational dominance necessary to fight and win our Nation's wars.

JBC-P is a family of systems that can share C2/SA across the joint battlespace from various platforms with disparate missions and requirements. The JBC-P product line will consist of the following family of systems:

• JBC-P full capability will be the standard computer, screen, and software. It is still under development, but will include integrated GPS, more memory, faster processors, and will be the same size or smaller than the current versions of the FBCB2 V4. Users will be able to remove the screen from its mount and move it to different locations within or around the platform, up to 15 feet away. Select leaders' vehicles will also receive a dismountable personal digital assistant (PDA)-like product, which can dock with the full capability, but when dismounted, continue to receive and send C2/SA information while the user is a short distance from the platform (300+ meters).

• JBC-P partial capability describes systems that require a level of interoperability with JBC-P, but may not use the same hardware or software to achieve that interoperability. These systems do not provide the same level of capabilities as JBC-P full capability. For example, a partial capability system designated for rotary wing aircraft needs to be able to share C2/SA, but does not have the space to mount a completely new JBC-P computer and screen in the cockpit. This system may use its own hardware, some of the JBC-P hardware, or may or may not use JBC-P software. Regardless, it will be interoperable at a minimum level so C2/SA information can be shared among all JBC-P platforms. Another example of a partial capability system is the movement tracking system used by Army logisticians. It uses its own hardware and software, but can share SA and communicate with JBC-P to a specified level. Partial also includes a handheld C2/SA device. This system will not have all of the capabilities of the JBC-P full, but will share SA and send and receive C2 messages.

• JBC-P beacon is a one-way beaconing device to populate the common operating picture and other JBC-P products with blue (friendly) position location information (PLI) tracks for combat identification purposes. Basically, it tells everyone with JBC-P where the beacon is and what kind of platform it is on. It will also send a "9-1-1" emergency message; with the push of a button, a message is sent telling leadership where the platform is located and that it

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is in need of assistance. A current example of a beacon device is the mini-transmitter (MTX) used by Special Forces and the U.S. Air Force. Beacons will be less expensive than full versions of JBC-P and will be fielded in enough quantities to ensure at least one for every two platforms is sending position reports to the common operating picture. Beacons will also aid in combat identification with a primary objective of informing "shoot/don't shoot" decisions and preventing fratricide.

JBC-P will introduce many new capabilities that were not available before in FBCB2. Among the new products for JBC-P is a dismountable PDA-type device that can be docked and undocked from a standard JBC-P full capable product. When undocked, the device will share C2/SA through the host platform communications via a wireless connection. Leaders and commanders can undock the PDA to take with them for dismounted operations a short distance (up to 300 meters) from their platform, or take to operations order briefings or rehearsals at the tactical operations center (TOC). Scouts can also use the devices for listening and observation post operations. A stand alone handheld product is also being developed, which will provide C2/SA to dismounted infantry, Special Operations Forces, reconnaissance units, and other users who require a manportable version of JBC-P with integrated communications.

JBC-P will provide greater capabilities than those of FBCB2. Warfighters will be able to download still images from digital cameras onto JBC-P and send them via the tactical internet. They will have a free draw "John Madden-type" capability and will be able to collaborate with others in near real-time. As combat vehicles fire their main weapons, a vector will be sent displaying the direction and target that the weapon is engaging. JBC-P will have the capability to display 3-D graphics, which will be especially useful to unmanned aerial vehicle (UAV) pilots who currently use FBCB2 for situational awareness and collision avoidance. JBC-P will highlight and display friendly units in various selectable colors and sizes on a user-defined common operating picture display. It will store sent messages, but not received messages, and resend or forward them when the operator reenters the net. JBC-P will display "snail trails" or retrace the movement of icons through time. It will also provide new and improved hardware, which integrates embedded GPS and training software to reduce maintenance and operator classroom training requirements. JBC-P also incorporates a "hide" capability for Special Forces, which allows them to receive SA and have only their transmitted SA displayed on platforms they choose, and/or come within threat proximity of their position (close enough that there is a risk of fratricide). This capability will help maintain operational security for sensitive missions. In short, JBC-P will provide numerous new capabilities that greatly increase the SA of joint leaders and commanders and significantly enhance their ability to provide effective command and control.

"Since the emergence of FBCB2 on the battlefield, combat commanders and leaders recognize its significance and have used it to great effect. FBCB2 has provided unprecedented levels of situational awareness at all levels of command and has provided an enhanced means of enabling battle command to commanders and leaders."

One of the important aims of JBC-P is to assist in the prevention of fratricide. To accomplish this long-sought-after goal, JBC-P systems should be fielded in sufficient quantities to effectively provide a very high fidelity SA of friendly units. Adequate numbers of systems will allow commanders and leaders to know exactly where their forces are located and where other friendly forces are located within their battlespace.

The current FBCB2-BFT system has been resourced to be fielded down to the key leader option (KLO) level (platoon leader and platoon sergeant level). JBC-P will be fielded down to KLO, plus all shooter and sensor platforms such as tanks, Bradleys, and UAVs. This will enable the "shooters" to have accurate SA and know where other friendly platforms are before they make "shoot/don't shoot" decisions and pull the trigger. Support vehicles that do not receive JBC-P full or partial will receive beacon devices at a rate of one for every two vehicles, and dismounted forces will have at least one handheld version of JBC-P for each platoon of infantry and for each reconnaissance or Special Forces team.

The capabilities envisioned for JBC-P are coming soon to the joint force. The evolution of FBCB2 to FBCB2-JCR and then to JBC-P is scheduled to correlate with the Army's software blocking schedule. The current version of FBCB2 (6.5) correlates with software block (SWB) 2; FBCB2-JCR will be fielded in conjunction with SWB 3; and JBC-P (version 1) will be fielded in conjunction with SWB 4.

Since FBCB2's emergence on the battlefield, combat commanders and leaders recognize its significance and have used it to great effect. FBCB2 has provided unprecedented levels of situational awareness at all levels of command and has provided an enhanced means of enabling battle command to commanders and leaders. As FBCB2 evolves into FBCB2-JCR and later JBC-P, it will only get better, more user friendly, and more capable. With an increase in quantity of fielded C2/SA systems, leaders and commanders will have a more accurate picture of the joint battlefield. JBC-P will further improve situational understanding and decisionmaking and will assist joint leaders by making it easier to mass both effects and forces at the critical point of an operation. Most importantly, JBC-P will help keep our joint warfighters alive by increasing combat effectiveness and helping in the prevention of fratricide.

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ARMOR 101

by Louis Gorenc and Laurie Austin

A professional soldier and tanker wants to know the operating "how and whys" of his vehicle. This article is only intended to provide basic knowledge of modern vehicle armor and its capabilities. Because armor development continuously evolves, only current armor will be discussed.

Steel Armor

There are several types of modern armor composed of steel alloys, aluminum alloys, titanium, composition materials, and at times, a mixture of all. The first motor vehicle armor was the application of steel plate riveted on the vehicle to prevent small arms bullet penetration. Plate armor was manufactured by rolling ingots through huge rollers that progressively reduced the thickness to the size required. The plate was then sheared and tempered in an attempt to make it harder than the projectiles that would be used against the plate — the harder the armor, the harder for the projectile to penetrate.

Since the first motorized vehicles were so low in horsepower, and not to overload the vehicle, usually one-quarter-inch rolled homogeneous plate (weighing 10 pounds to the square foot) was used to surround all critical components and crew. The British tested their first prototype tank on 6 September 1916 and it was in battle by 15 September. It must be remembered that naval ships were armored for decades and armor technology was transitioned to land vehicles. As horsepower increased, so did the thickness of steel armor to resist penetration and explosive blast forces. An early technique, first used by the French in the Schneider CA1 tank (1915) and still used today, was the spacing of armor plates with an air gap between plates to dissipate the round's energy.

During World War I, the average antiarmor gun size was less than .50 caliber. The tank has always been used as an offensive weapon with the front the most protected because the front received the greatest assault. By early World War II, vehicle armor was thicker, made denser by alloying with small amounts of other elements, and with the use of improved rolling mill and casting techniques, along with better heat-treating processes, armor became more resistant to perforation.

Another technique was the sloping of armor, which increased the cross sectional length for penetration, thus increasing the force needed to perforate the same plate thickness. A sloping glacis also increased the chance of deflecting a round. During this period, armor was penetrated by brute force. As armor became thicker, round calibers increased to 122mm and more.

During World War II, thick armor was made vulnerable by a new weapon, the high explosive anti-tank (HEAT) round using the Munroe effect shaped-charge round. In 1888, Charles E. Munroe, working at the Naval Torpedo Station, discovered that when detonated, a void in an explosive placed next to a steel plate could be focused into impressing an imprint into the metal. In Germany, Egon Neumann, in 1910, furthered that effect finding that a conical shaped TNT charge would pierce steel to a much greater depth than the same amount of explosive would

"In 1966, the Russians developed composite armor technology, known as combination K, in its T-64 main battle tank. Early T-64 armor used a layering of steel reinforced with glass fibers embedded in a plastic material "sandwiched" between the steel plates. Later, T-64s substituted a boron carbide ceramic material that was much more resistant to HEAT penetration. The theory of composite armor is it is stronger and lighter than steel and it dissipates the HEAT jet and/or breaks up a hardened steel armor piercing round (kinetic energy (KE)), preventing penetration into the inner armor plate."

dent the steel. This effect was not used until World War II in the HEAT round.

The HEAT round was based on a shaped explosive charge, a hollow void in the center of the explosive, like the bunt in the bottom of a wine bottle. It had a ductile metal liner made of copper, and detonated from a short stand-off distance, projecting the copper as a well-focused, narrow, high-velocity plasma wave (up to 12 km/sec) to basically burn a small hole through the plate, damaging or possibly igniting anything in the direct path of its jet. By World War II, HEAT could penetrate up to 2.5 times the diameter of the warhead diameter. With the development of rocket-propelled HEAT rounds, a soldier could destroy the best armored tank. HEAT rounds necessitated new armor to resist penetration.

Titanium and Aluminum Armor

Aluminum armor was developed for light vehicles that would be air dropped for fast combat deployment. Aluminum is approximately one-third the weight of steel. One square foot of a one-quarter-inch thick aluminum plate weighs approximately 3.3 pounds, compared to 10 pounds for steel. But, the ultimate tensile strength of heat-treated aluminum armor is about 75,000 pounds per square inch (psi) with a density of 0.102 pounds per cubic inch (lb/in^3). When compared to steel armor, which is over 148,000 psi, it has a density of 0.284 lb/in^3, and twice the hardness of aluminum. This basically means steel has twice the resistance to breaking, three times the molecular compaction (a higher resistance to penetration), and will break up hardened penetrators easier than aluminum armor. So the trade-off for armor vehicle designers is high-strength, heavyweight steel, versus less strength, lighter-weight aluminum. Note: some aluminum armors are superior in protecting from fragments (mortars and artillery fire), which is why they are used on personnel carriers.

Titanium is a lightweight, strong, and stable metal with excellent ballistic resistance properties that can be fabricated by affordable production techniques. Compared to steel and aluminum, titanium has a density of 0.163 lb/in^3, an ultimate tensile strength of approximately 100,000 psi, and a hardness of 265 Brinell. It can be rolled, cast, welded, and easily machined. It approaches rolled homogeneous armor (RHA) in all areas; however, it is expensive to produce and some designers are not familiar with its structural properties. Titanium is finding its way into more armor vehicles, not only in hull plate, but in components that will reduce the weight of the vehicle and still provide steel-like protection.

Composite Armor

Post-World War II armor developments were concerned with defeating HEAT rounds. In 1966, the Russians developed composite armor technology, known as combination K, in its T-64 main battle tank. Early T-64 armor used a layering of steel reinforced with glass fibers embedded in a plastic material "sandwiched" between the steel plates. Later, T-64s substituted a boron carbide ceramic material that was much more resistant to HEAT penetration. The theory of composite armor is it is stronger and lighter than steel and it dissipates the HEAT jet and/or breaks up a hardened steel armor piercing round (kinetic energy (KE)), preventing penetration into the inner armor plate. The hardness of the ceramics breaks up the projectile and the sharp shards further shred the penetrator. More layers were introduced, which offered more protection, and had the ability to absorb the energy of KE hits.

Composite armor's development continued with multiple layers of steel alternated with more layers of steel, ceramics, plastic honeycombs, and other very dense unique materials for protection against both HEAT warheads and kinetic penetrators. In the 1960s, the British developed this type of armor and progressed to adding tungsten rods or other very dense unique material encapsulated in titanium in a cast aluminum block and placed in the glacis of a tank. This was used to deflect long kinetic penetrators, causing them to expend more energy in piercing through the armor. Different types of ballistic energy-absorbing foams were also added to dissipate projectile fragments as the penetrator rod broke up. Upgraded ceramics were sometimes substituted for the tungsten or other very dense unique material rods because they were less expensive to manufacture. For the same thickness, composite armor can be up to several times more effective than just steel armor plate, but steel and metal armors have a superior multi-hit capability as compared to composites. Many composites appear to be superior based on a one-fragment hit, but perform poorly when hit with multiple impacts.

Reactive Armor

Israel was the first to develop explosive reactive armor (ERA) in the late 1970s, which was used successfully in the 1982 war. Later, Russia and the United States began developing ERA, made up of layers of high explosives, usually C4, layered between steel plates, so when struck by a shaped charge, the explosive detonated, disrupting the high velocity plasma jet of the shaped charge. The ERA was manufactured in medium-sized bricks and usually attached to the outside of main battle tanks. It is used to defeat HEAT rounds, but once the ERA was detonated, it left an unprotected area vulnerable to another strike. Today's ERA is more sophisticated, using fewer explosives or no explosives, instead using other materials that provide multi-hit protection. This

provides lighter loads and less stress on vehicles and can be applied to smaller and lighter vehicles. ERA will not protect against KE rounds because the kinetic rod is capable of passing through the explosive and penetrating the vehicle's armor.

The T-80U Russian main battle tank uses Kontakt-5, a third-generation ERA developed by the Russians. Kontakt 5 is the first ERA to defeat armored piercing fin-stabilized discarding sabot (APFSDS) ammunition and is composed of explosives layered between steel plates, which move sideways when detonated. This powerful side motion cuts through the KE penetrator or the plasma jet to break it up and reduce the penetration energy. The Russian Black Eagle tank uses upgraded Kaktus ERA.

Anti-Spall Liners

Anti-spall liners are usually made of Kevlar or other ballistic fiber material placed inside a hull or turret to prevent fragments of hull or turret material from breaking off and injuring crewmembers when a round strikes the vehicle. The blankets catch these high-speed particles, stopping them before damaging equipment or crew.

Slat Armor

The concept of slat armor goes back to World War II when cages were fabricated by tank crewmembers to prevent shaped charges from impacting their vehicles. Usually some type of chain-linked fencing was used to detonate rocket-propelled grenades (RPG). Modern slat armor is composed of steel slats (flat stock) welded on a frame, which extends from an armored vehicle, and surrounds the vehicle for complete protection. This armor resembles a large opened slatted window blind. The slats are spaced wide enough for the crew to see out of the vehicle, but close enough to prevent an RPG from passing through and penetrating its armor. This inexpensive and light weight protection is not for all types of threats, but has use in theaters where RPGs are primarily used.

Future Armor

Armor is continuously being upgraded for better protection; new materials are being developed, along with new manufacturing processes and techniques. An interesting area of protection under development is electromagnetic armor that deflects or deforms the plasma jet or KE round using its own heat or kinetic energy.

Developing armor is like building the "un-pickable" lock, someone will always figure out how to pick it. When impenetrable armor is developed, someone will develop ammunition that will penetrate it.

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"Modern slat armor is composed of steel slats (flat stock) welded on a frame, which extends from an armored vehicle, and surrounds the vehicle for complete protection. This armor resembles a large opened slatted window blind. The slats are spaced wide enough for the crew to see out of the vehicle, but close enough to prevent an RPG from passing through and impacting a lightly armor vehicle."

The Modern Army Combatives Program: Benefits of Integration into Company Training

by Captain Brian W. Loyd

Often in the armor community, we get caught up in the repetitious routine cycle of maintenance, gunnery training, and maneuver training. Soldiers quickly become bored performing preventive maintenance checks and services on tanks, conducting chair drills, and sitting through blocks of instruction on movement techniques — they beg for change of pace. Commanders who maintain a creative, up-tempo, and dynamic training schedule will suffer from fewer discipline problems with soldiers.

One fast growing activity commanders are using to break up mind-numbing periods of maintenance, classes, and recovery is the Modern Army Combatives Program (MACP). MACP offers commanders a relatively low-resource, easy-to-plan, and very beneficial training program that can be implemented into training schedules. Training soldiers in combatives reinforces the warrior spirit and ethos that should drive them to victory in combat. Basic combatives knowledge is a requirement for every soldier and MACP is the Army's approach to training soldiers efficiently and effectively by using decentralized train-the-trainer methodology, while maintaining high performance standards for trained soldiers through aggressive quality control.[1]

In 1995, the 2d Ranger Battalion wanted to add martial arts training to its training regime.[2] At the time, the Army's current combatives doctrine was rudimentary, not significantly tied to any established global martial art, and generally boring. Soldiers developed a lackadaisical attitude toward the program. A committee was formed that scoured the earth to find a martial art that would drive the new army combative program. Because of its ease to learn, competitive spirit, and with the growing popularity of the Ultimate Fighting Championship (UFC) and the success of the jiu-jitsu in these competitions, Brazilian jiu-jitsu was selected as the base for MACP. MACP then further integrated strengths and specialties from other martial arts, such as judo/wrestling takedowns and muay thai/boxing strikes, to make modern army combatives effective and lethal in combat.[3] Today, using train-the-trainer methodology, MACP is quickly spreading throughout the Army.

The home of the MACP is Fort Benning, Georgia, where the U.S. Army Combative School (USACS) resides. MACP consists of four levels of training. Level I is a one-week course designed to teach basic combatives techniques, primarily ground fighting, basic jiu-jitsu positions, and basic drills reinforcing the fundamentals of 'position, then submission.'[4] Position, then submission refers to a soldier first moving to a position of advantage relative to his opponent then subsequently finishing the fight using a choke, joint lock, or devastating blow. Students practice these fundamentals and techniques through drill repetition and competitive sparring.

Level II is a two-week course tailored to teach advanced combatives techniques, teaching methodologies, and philosophies.[5] Students continue to expand on their level I knowledge, learning new positions of advantage and how to engage

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in hand-to-hand combat while wearing field equipment. Level II qualified instructors can supervise level I instructors and referee basic competitions.

Level III is a four-week course designed to integrate fighting skills into infantry battle drills and close quarters battle (CQB).[6] Level III qualified instructors have the authority to instruct the level I course, referee post events, special rules competitions, and serve as battalion master trainers for scenario-based training.

Level IV is a four-week course designed to teach management skills at the installation level.[7] Instruction will focus on how to design, manage, execute, and promote a safe combatives program at the installation level. Level III and IV programs are taught only at USACS. To ensure a certain standard of performance by instructors, a quality control team from Fort Benning will tour Army

Continued on Page 49

Rifle Marksmanship for Today's Battlefield

by Captain Joe Morrison

The 1st Armor Training Brigade (ATB) at Fort Knox, Kentucky, has spent the past year dramatically changing the way new soldiers conduct marksmanship training. The current operating environment demands all soldiers engage and kill the enemy with personal weapons. Today's one-station unit training (OSUT) and basic combat training (BCT) graduates are on the ground conducting close quarters combat. The 1st ATB has moved forward in preparing warriors for combat, placing more emphasis on advanced rifle marksmanship, emerging equipment, offensive firing positions, and the engagement skills trainer (EST 2000) virtual training system.

Soldiers training with 1st ATB now carry individual weapons at all times in accordance with the weapons immersion program. They also wear body armor with the small-arms protective plates inserted, as well as elbow pads, knee pads, and combat helmets when conducting marksmanship training — they train as they will fight.

Before graduating, soldiers will have spent more than 17 hours learning and reinforcing marksmanship fundamentals on the EST 2000. The EST is a valuable tool, which enables instructors to provide immediate feedback during the critical developmental stages of marksmanship. In a controlled environment, the new shooter will gain a deep understanding of the effects of the four fundamentals of marksmanship: steady position, aiming, breathing control, and trigger squeeze. Prior to Fort Knox receiving the EST, a drill sergeant or peer coach would observe and critique shooters, which can take all day and expend multiple rounds. The EST provides shooters the ability to see the point of aim before the shot, point of impact, point of aim after the shot, the pressure applied to the trigger, and the cant of the weapon immediately after firing. The ability to make on-the-spot corrections prevents bad habits from forming and eliminates the need to break them before qualification. Every step of marksmanship instruction follows the pattern of learning on the EST and then practicing the skill on a live-fire range. All of the ranges the soldiers see during their time on EST are digital replications of the ranges at Fort Knox. Teaching in the low-stress and controlled surroundings of a virtual environment results in a more comfortable and confident soldier when they move to the actual range. Over the past year, the percentage of soldiers qualifying on the first try has risen by 19 percent and the number of soldiers failing to qualify is nearly nonexistent.

Currently, testing a soldier's shooting ability reflects the needs of an expeditionary army fighting on the offense. Shooting from the foxhole or fighting position is no longer part of qualification. Instead, they shoot 20 rounds from the prone supported, 10 rounds from the prone unsup-

"Once soldiers are familiar with the techniques and equipment, they are given the opportunity to practice the skills on a live fire range during ARM modules 3 and 4. During the day, they engage pop-up targets using an M68 from the high ready, low ready, around a wall, and while moving down range. To replicate the COE, civilian targets are used to add realism and target discrimination to the training."

ported, and 10 rounds from the kneeling position. Although more difficult, these combat-simulated positions provide a better indicator of the soldier's ability to engage the enemy while on the offensive.

As a scout platoon leader in Iraq, I was called on to dig a foxhole; I do, however, wish I had learned to shoot from the kneeling position before deploying. The 1st ATB trains soldiers how to create a stable firing base in the kneeling position by teaching them correct elbow placement and how to shift their body weight onto their back foot. These properly applied techniques allow soldiers to effectively engage targets while minimizing their silhouettes.

In Iraq, we used PEQ-2A aiming light/target illuminators, as well as M68 close combat optics, mounted on M4 carbines. We had one noncommissioned officer in the company who knew how to boresight the optic devices. Having had no prior training on either device, I lacked confidence in both devices and was convinced they made my weapon heavier. I was more worried about losing them than learning how to effectively use them.

My introduction to short-range marksmanship training came after being in eastern Baghdad for nearly five months. It was outstanding training, and from that point on, we made certain all replacement soldiers completed the training before going on a mission. In most cases, soldiers have limited shooting experience prior to deploying. Their training normally includes qualifying from the foxhole and prone position, which is not enough — they need to train for the "real battlefield." Waiting until they get in country is too late to train the skills they need to fight and win.

The 1st ATB requires all soldiers to complete an advanced rifle marksmanship (ARM) program, giving them training and confidence in the equipment and techniques that will make them lethal in combat. During ARM module 1, training on the EST teaches soldiers the fundamentals of the low- and high-ready positions, and firing with a "controlled pair" to the lethal and incapacitating zones. They also have the opportunity to practice the rapid aim technique using the M68, as well as the large and small rear sight apertures. Aimed quick kill is taught for room clearing and engaging targets up to 12 meters. Introducing these techniques using the EST provides soldiers confidence in a safe environment and aids in increasing their accuracy rate with repetition.

During ARM module 2, soldiers learn how to mount and boresight the M68 and PAQ-4, using the bore light and the proper boresight target. Once soldiers are familiar with the techniques and equipment, they are given the opportunity to practice the skills on a live fire range during ARM modules 3 and 4. During the day, they engage pop-up targets using an M68 from the high ready, low ready, around a wall, and while moving down range. To replicate the COE, civilian targets are used to add realism and target discrimination to the training. After-action reviews are conducted at the completion of each segment to give soldiers "ownership" of the training and develop the thought processes required for close quarters combat. At night, they engage targets using the PAQ-4 while wearing night vision goggles, which provides soldiers the confidence of knowing they can quickly and accurately engage and hit targets under nighttime conditions.

Soldiers graduating from 1st ATB are no longer arriving at their units with just the basics. The luxury of training for months or years before being sent to a combat zone is nonexistent. Soldiers must be lethal upon graduation and the 1st ATB continues to update and enhance training to provide the Army with the most effective weapons on the battlefield — "Soldiers of Steel."

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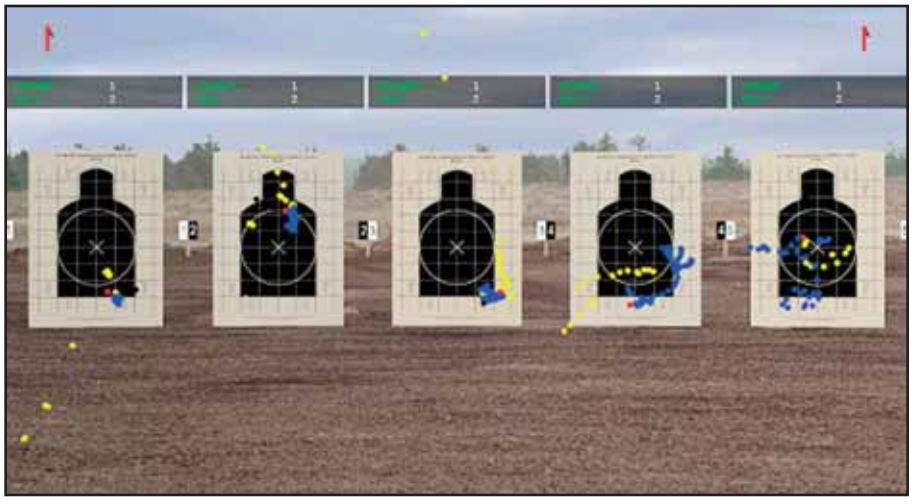
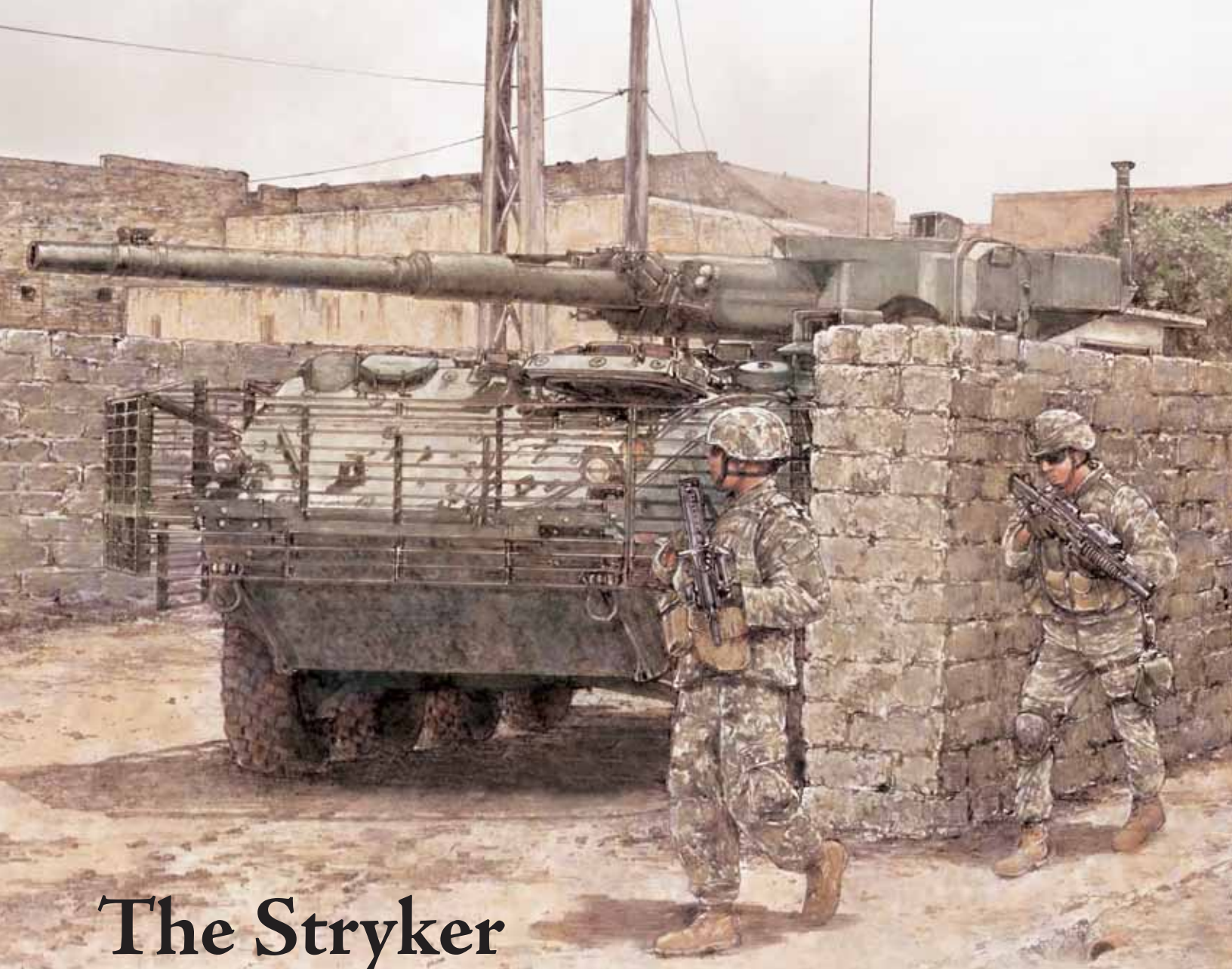


Figure 1. Point of Aim



The Stryker Cavalry Reconnaissance Troop

by Captain Matthew L. Blome

Stryker brigades and cavalry reconnaissance troops have served in Iraq since November 2003. After more than five years of existence, including two years of combat service in Iraq, it is time to review the experiences of this combined effort with an eye toward ongoing transformation.

This article focuses on how the cavalry troop integrates into squadron and brigade operations and ways to improve the organization. Based on battlefield observations, the Stryker cavalry reconnaissance troop, as it is now organized, is an effective and adaptable organization able to conduct a wide variety of reconnaissance and security missions.

The Stryker cavalry reconnaissance troop I commanded deployed to Iraq from November 2003 until October 2004. The troop conducted a variety of mission sets, which included:

- Operations to isolate the city of Samarra in a mid-intensity fight.
- Stability and reconstruction operations (SRO)-oriented area security missions over a large area, requiring integration of traditional security tasks, civil assistance and administration, and training and integrating internal security forces.
- Border security missions with internal security forces focused on smuggling and moving foreign assistance and fighters.
- Low-intensity, enemy-focused area security missions in urban areas.
- Long distance convoy escort missions.

The troop identified a number of problems initially, but quickly adapted and applied creative solutions. These problems, along with their solutions and an examination of current doctrine, are useful starting points to demonstrate how the Stryker concept and the transformation of cavalry units may improve.

Although the Stryker cavalry concept was originally intended to maximize dismount capability, a modified table of organization and equipment (MTOE) shortage of dismounted soldiers at the platoon and troop levels prevents the troop from meeting its

doctrinal capabilities requirements. Training and operational deployment experience often shows that dismounts are the limiting factor for many operations. Too few dismounts prohibit the ability to conduct platoon-level tasks, such as hasty building searches or covering more than two named areas of interest (NAIs) with dismounts. This weakness is often exacerbated by force protection and other outside distracters.

While the Stryker vehicle has excellent tactical and operational mobility, the troop has limited ability to sustain itself or conduct command and control (C2) on the move because the troop headquarters is tied to stationary and soft-skinned platforms. While human intelligence (HUMINT) soldiers are vital and serve as a huge combat multiplier at the troop level, they need to be located within the troop headquarters to maximize both their capabilities and the platoon's dismounted strength. Clearly, the Stryker cavalry troop requires a more robust organizational capability, particularly dismounted scouts, to better meet its current operational requirements in Iraq, as well as those outlined in doctrine.[1]

Organizational Problems

While conducting the various mission sets mentioned above, three problem areas in current Stryker cavalry doctrine and organization became clear: the troop is very flexible and adapts well to different mission sets, although it requires significant augmentation or task organization efforts for success; the squadron, and thus recce troops, must be able to operate independently in an economy of force role without the direct support of infantry elements or field artillery fires; and in any environment, the troop must be able to fight to facilitate its reconnaissance or security mission, at least against a similar or less capable enemy. This includes both offensive and defensive tasks, particularly against a squad- or team-sized dismounted threat.

These problems made mission execution unnecessarily difficult in Iraq and placed soldiers at unnecessarily higher levels of risk, particularly in sustained combat. These problems begin at the platoon level and force the troop commander to mass multiple platoons, which can make the most minor contact or obstacle a troop fight.

"Dismounted patrols were difficult to conduct and often required significantly more dismount power within the platoon to handle even a single enemy combatant, especially in an urban environment. Even during mounted movement, the Stryker is soldier intensive. With a driver, gunner, vehicle commander, and air sentry, it requires a minimum of four soldiers."

Dismount strength. Dismounted patrols were difficult to conduct and often required significantly more dismount power within the platoon to handle even a single enemy combatant, especially in an urban environment. Even during mounted movement, the Stryker is soldier intensive. With a driver, gunner, vehicle commander, and air sentry, it requires a minimum of four soldiers. This need for security is especially acute in urban areas, where the terrain is more complex and there are more areas for the enemy to hide. While the current doctrinal platoon and troop manual shows only two soldiers remaining on the vehicle during dismounted operations, three are actually required to secure and effectively command and control the vehicle due to its size and the digital systems on board, while four soldiers are ideal. This aspect of operations alone immediately reduces the potential number of dismounts available to the platoon from twelve to eight, which might potentially operate in two dismount teams of two scouts and two counterintelligence (CI) specialists each. Although platoons are rarely at full strength, due to normal details, taskings, wounded, and leaves/passes, even at full MTOE authorization, platoons had only four to six soldiers available for dismounted maneuver.

During area security operations in northwestern Iraq along the Syrian border and in Mosul, dismounts were absolutely vital to platoon and troop success. Platoons maximized their dismount capability by using two dismount teams of four soldiers each. However, the troop found that with the exception of the convoy escort missions, the degree of success, whether in a rural open area or in broken or urban terrain, was directly proportionate to an increased number of dismounts. When the mission required additional dismounts, platoons left one Stryker at the squadron forward operating base (FOB) or troop outpost to increase the number of dismounts by freeing up the vehicle crew. Dismounted scouts were also pulled from one platoon to augment another when the entire troop was not required to conduct a particular mission or task.

Sustainability. The lack of dismounted strength in the platoon leads to problems with several aspects of the sustainment of combat operations in any level of conflict. In Iraq, it was often necessary to develop a patrol schedule that rotated platoons throughout a 24-hour period to maintain coverage on a wide variety of NAIs in the troop's area of operations. The platoon was

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the smallest element suitable to conduct combat patrols or establish area security sets to observe countermortar and rocket NAIs during troop operations in northwestern Mosul. Almost immediately, FOB operations often took away dismounted strength for operations to man guard towers and entry control points. FOB quick reaction force (QRF) requirements also took an additional platoon out of the fight. These factors are the unavoidable price of doing business in Iraq.

The shortage of dismount strength becomes most troubling when the troop suffers casualties. Due to a shortage of scouts in the recce platoon, several mortarmen were moved to scout platoons, bringing them closer to full strength. From a simple numbers standpoint, in a four-man reconnaissance team, if you take away two or three of the soldiers, the team is no longer effective. We augmented scout platoons from any available source, including the mortars, attached engineers, military police, or infantrymen. Often, recce platoons conducted missions with four to five different organic MOS soldiers, including the platoon medic.

"While doctrine makes it clear that the squadron will require augmentation to fulfill some tasks during high-intensity conflict, the troop will need to be augmented as it currently stands for any level of conflict, from SRO to high-intensity conflict. Even in the low-intensity conflict that characterizes the insurgency in Iraq, there is still a huge need for firepower to deal with enemy forces hiding in bunkers and stone or brick buildings, and those located out of small arms range."

The troop headquarters struggles to fight and move its assets during continuous operations. First, the tactical operations center (TOC) shelter is ridiculously overweight and cumbersome, based on an M1113 chassis HMMWV with a small shelter. This configuration gives it no protection, no tactical mobility for the troop XO, limited operational mobility, and takes the troop XO completely out of the direct fight if the commander is lost or gone. Only one soldier fits in the back. Soldiers in the front two seats cannot even operate voice radio communications without modifying the vehicle's hardware configuration — it simply cannot operate on the move.

Ongoing operations in the command post (CP) shelter leave insufficient space for both an operations NCO and the troop senior CI specialist. Since the vehicle is already overweight, it has difficulty pulling the troop headquarters' equipment trailer, which must be line hauled over anything other than tactical distances. Without a combat vehicle, the first sergeant also lacks protection during movement, hampering his ability to accomplish logistics package (LOGPAC) operations or facilitate casualty evacuation in the presence of any threat elements without borrowed combat power from another platoon.

Finally, the Stryker cavalry troop lacks the combined arms capability that is the hallmark of other cavalry formations in the Army — a primary strength of cavalry units. While doctrine makes it clear that the squadron will require augmentation to fulfill some tasks during high-intensity conflict, the troop will need to be augmented as it currently stands for any level of conflict, from SRO to high-intensity conflict. Even in the low-intensity conflict that characterizes the insurgency in Iraq, there is still a huge need for firepower to deal with enemy forces hiding in bunkers and stone or brick buildings, and those located out of small arms range.

The dilemma of Stryker reconnaissance. The troop can gather information in an urban area, but often lacks sufficient defensive combat power to do anything but return fire and break contact, even in a low-intensity conflict environment. Doctrinally and organizationally, the troop is on the horns of a dilemma. At one end of the spectrum, it is perceived as too lacking in combat power to operate in a built-up area, thus it is underutilized as a reconnaissance element.

Upon arrival in Iraq at the end of November 2003, the brigade was attached to 4th Infantry Division for Operation Ivy Blizzard, an attack into the city of Samarra to defeat noncompliant forces. The squadron's first mission was to support the brigade by initially conducting a very limited reconnaissance around the city and then isolating the city to prevent insurgents from moving in or out.

Each troop established traffic control points to control movement on main avenues of approach into the city. However, the recce troops and squadron were restricted from conducting any kind of reconnaissance in the city of Samarra prior to the beginning of attacks during Operation Ivy Blizzard for force protection reasons. Units from 4th Infantry Division operating in and around the city had more than three weeks of reconnaissance-focused operations in the city prior to the attack and were able to conduct extensive target development, close target reconnaissance, route reconnaissance, and area of operation familiarization prior to the attack. Had the troops been able to conduct more than one day of reconnaissance within the city, they could have, at a minimum, provided detailed reconnaissance of avenues of approach, trafficability of routes, close target reconnaissance on known targets, and possibly some further target development. As a result of this restriction, the limited information available forced the infantry battalions to "troll for contact," in the words of one battalion commander, until they could develop their own actionable intelligence or confirm the correct location for identified targets within the city. This reconnaissance could have also assisted troops in identifying heavily and lightly trafficked areas to allow for greater focus and refinement to traffic control point locations once the squadron began operations to isolate the city.

Obviously, reconnaissance objectives and allocations of combat power need to be adjusted to fit the environment and nature of the threat. However, in any operation, specific intelligence

requirements can be assigned to ground recce troops, for which rifle companies are not well suited, and will greatly facilitate offensive operations by infantry battalions.

The other side of the dilemma faced the squadron when it was required to relieve another unit in the western half of Mosul for area security operations in that it was expected to conduct tasks that could have easily exceeded its potential for combat power without augmentation. This economy-of-force mission allowed the brigade to allocate infantry forces elsewhere. While recce troop operations were severely restricted in Samarra, troops effectively replaced rifle companies in Mosul. The troop conducted an area security mission focused on countermortar/rocket operations.

In Mosul, the troop handled most security tasks within the city, which included presence patrols, close target reconnaissance, and actions on contact with complex ambushes against platoon-sized enemy elements using small arms, rocket propelled grenades, improvised explosive devices (IEDs), and vehicle-borne IEDs. Although the brigade prohibited recce platoons from acting as the assault element for cordon and search missions prior to the squadron's operations in Mosul, recce troops may be better suited than infantry companies for the exploitation phase of cordon and search operations due to their familiarity with embedded and organic HUMINT assets.

Regardless of its role, the troop must be able to fight with enough combat power to facilitate its outlined reconnaissance or security missions in any environment. While the squadron's economy-of-force mission was nondoctrinal, the troop spent the majority of its time conducting missions supporting this role. However, in its doctrinal role, outside of the high-intensity conflict, it is still necessary for the troop to fight *in contact* to allow the infantry battalions to conduct decisive maneuver *out of contact.*

Current Doctrinal Position

Ironically, in view of experiences in Iraq and the associated low-intensity conflict, one might conclude that the troop and squadron may actually be optimally organized for major theater war within the limitations outlined in current doctrine. This is only after considering its emphasis on information gathering through stealth, a reduced presence on the battlefield, its emphasis on dismounted reconnaissance, and the apparent desire for security operations mostly out of contact. These emphases are consistent with an orientation on facilitating the conventional lethal fires targeting drill. In other words, it is the most efficient way for a light organization to adapt to conventional high-intensity combat.

While current doctrinal capabilities support the intent of the troop and squadron to operate by stealth in the context of high-intensity conflict, a brief comparison of these capabilities, the troop's organizational abilities, and operational requirements clearly show disparities between doctrine, organization, and experience. Instead of just needing heavy augmentation to perform offensive and defensive missions, the troop requires significant augmentation to perform tasks in support of its specified missions.

Obviously, strictly mounted operations preclude the conduct of HUMINT or intelligence collections, and severely limit the use of stealth for reconnaissance. How anyone can "with organic counterintelligence (CI) assets, conduct detailed mounted operations in urbanized terrain (MOUT)-dominant reconnaissance" in any environment is a mystery, since one simply *must dismount* to talk to people. Clearly, this comment on the adverse affect of continuous reconnaissance is true, since any element conducting sustainment operations will reduce the number of areas for reconnaissance.

Aggressive reconnaissance against a lightly equipped threat is not possible for several areas, which would require more than a platoon for many situations during routine combat reconnaissance patrols. More than one platoon is required to mass sufficient dismounts for types of contact other than defending the unit for the purpose of breaking contact.

Close, stealthy reconnaissance is certainly possible, but completely dependent on the factors of mission, enemy, terrain, troops, time available, and civilians (METT-TC), and is of limited use in Iraq based on the vast cultural differences and the alternating closely built-up or open terrain. While you may hide a Stryker in the rolling hills of the open prairie at night, you will not hide one in the streets of Mosul at any time.[2] The combination of dense middle-eastern construction, dogs, population density, shepherds, children, and close-knit neighborhoods will almost always prevent concealment.

The troop's ability to reduce risk to the Stryker brigade combat team by assuring survivability through information to avoid contact or achieve overwhelming combat power at the decisive point depends entirely on its ability to maintain an economy of force at all other places away from the decisive point, at least through observation. This observation is only as viable as the troop's or squadron's ability to make contact on terms that allow the infantry battalions to remain out of contact.

Not only will platoons and troops have difficulty meeting all doctrinal requirements, the doctrinal missions have been defined so narrowly that they do not address the missions that the squadron is asked to do, both in doctrine and in recent operational experience. The experience of the squadron at combat training centers is also consistent with these disparities. These disparities will require minor revisions to doctrine as it currently exists and major changes to the MTOE and force structure of the recce platoon and Stryker cavalry troop.[3]

A more robust troop organization is required. Current doctrine shows an outdated organization for the troop as the commander now has a reconnaissance vehicle, the section includes the nuclear, biological, and chemical (NBC) truck, and the troop is authorized only one E5 supply soldier.

While the Stryker is a uniquely capable vehicle, we are not maximizing its potential as the troop is currently configured. The bench seats actually seat up to ten dismounts comfortably during tactical movement, while we have at most two or three at any one time, including the attached platoon medic. In fact, when our relief unit relieved us, we fit two scout platoons (nearly 40 soldiers) in each platoon of RV Strykers, so that every man in the relieving unit could participate on the right-seat-ride missions. There is also plenty of space for additional communications systems.

Recce platoons have plenty of leadership, but not a lot of led. In a 20-man platoon with one officer, ten NCOs, and only 10 enlisted soldiers, there are more leaders than led within each platoon. This top-heavy aspect of the platoon often creates shortages by grade and confusion among the ranks about who works for whom. As a result, dismounted patrols often contain a plethora of sergeants, but very few enlisted soldiers. The NCOs fill positions long recognized by the Army, which include a senior scout, vehicle commander, section leader, and team leader. The MTOE seems to have left out the soldiers necessary to fill out the organization.

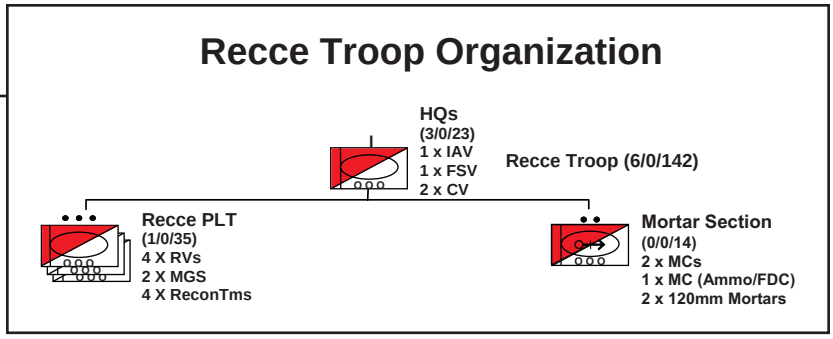

Figure 1

The mortar platoon sergeant is slotted against a five-ton cargo truck with trailer. From this platform, he is expected to provide command and control in the same environment as his mortar carrier Strykers, as well as provide his own fire direction, since the crew of each Stryker is consumed with the tasks of operating the vehicle and the gun. The mortar platoon sergeant should have a vehicle that can operate with the same degree of protection and mobility as the mortar carriers, as well as support the systems required for basic fire direction. The troop definitely requires a more robust organization to address these problems.

Reorganizing the Recce Troop

The headquarters section should include two carrier vehicle (CV) or reconnaissance vehicle (RV) variants, one infantry carrier vehicle (ICV), and one fire support vehicle (FSV), with a medium tactical vehicle-based CP shelter for static and HUMINT operations. The most important addition is dismount strength, each RV carries not only a crew of three soldiers, but also a four-man dismounted recon team, more than doubling dismount strength. The recce platoon retains six vehicles, including four RV and two mobile gun system (MGS) Strykers operating in three two-vehicle sections or two two-vehicle sections.[4] This infusion of manpower is vital to address most of the disparities between doctrine, organization, and experience. The additional MGS vehicles provide a combined-

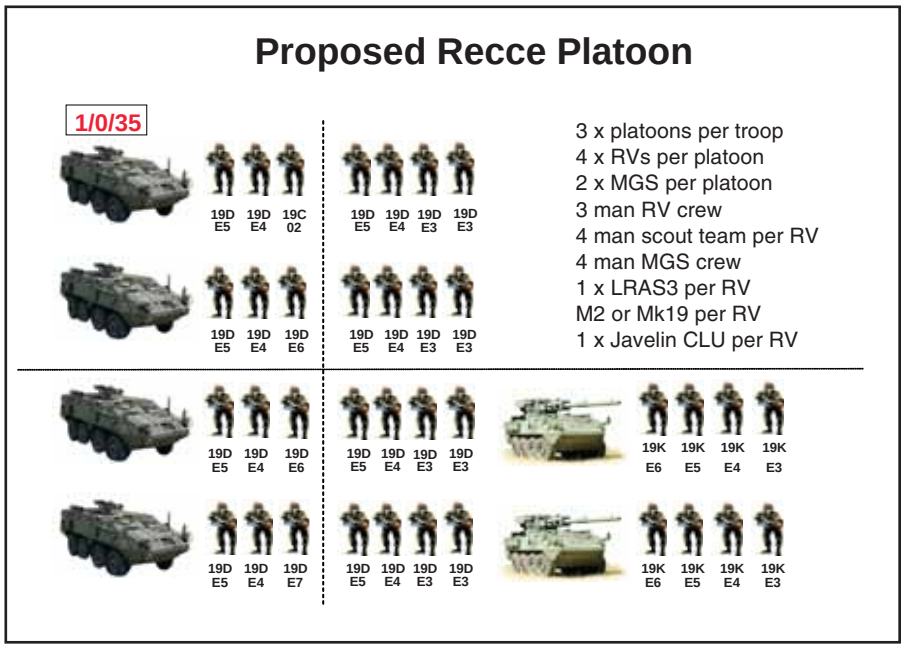

Figure 2

Figure 3

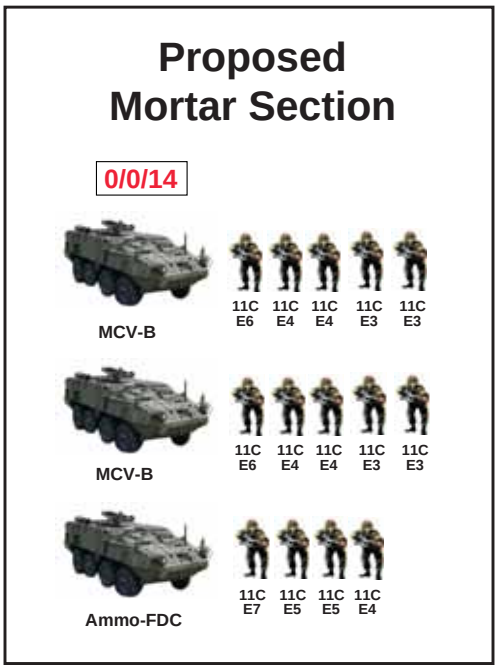

Figure 4

arms capability at the platoon level, as well as a degree of flexibility and robustness now absent, by providing more capability within the platoon, as well as allowing the troop commander to task organize into four viable maneuver elements. The mortar section includes two mortar carrier vehicles (MCVs), and a medical evacuation vehicle (MEV) chassis Stryker (or IAV) configured to hold additional ammunition and the fire direction center (FDC) equipment.

These additional assets are critical to providing the capability to take on limited nontraditional cavalry tasks in support of traditional doctrinal cavalry missions. These tasks include hasty cordon and search missions for targets of opportunity, screening operations against primarily dismounted or motorized threats, and area security over widely dispersed areas for reconnaissance handover to the brigade's infantry elements. Also, the combined arms nature of these organizations will enhance the ability to conduct stealthy dismounted reconnaissance and other unique capabilities of the Stryker-equipped cavalry troop by providing the security and organic sustainability required.

Current doctrine and organization seem to treat the Stryker simply as a limited fighting capability edition of the heavy troop with some cursory mention of "multidimensional aspects of reconnaissance," rather than as an opportunity to finally provide sufficient dismount capability and robustness to answer the brigade commander's priority information requirements (PIR) in the full spectrum of conflict. These proposals meet the needs identified in Iraq, as well as the shortcomings identified in doctrine.[5]

The reorganization of the troop's embedded HUMINT personnel is also crucial. While they were a huge combat multiplier in Iraq, these soldiers need to be reallocated within the troop to maximize their effectiveness. This is in no way to say that they should be taken out of the cavalry reconnaissance troop, but they are of greater use as a consolidated asset. This proposal would pull 97B personnel out of platoons and keep platoons 19-series pure. It would reduce the number of 97-series soldiers to three two-man teams, plus one staff sergeant-level senior CI specialist in one section, maintained within the troop headquarters. This has the key advantage of consolidating the troop staff for information management and analysis, facilitating intelligence information flow up and down reporting channels. It also better allows the commander to mass or distribute assets to each of his recce platoons, without taking away dismount strength from the platoons. As HUMINT personnel are currently configured as an integral part of the platoon, these personnel are used interchangeably with scouts during routine missions and patrols. Often, to maximize the capabilities of HUMINT personnel, it is essential to stay at the troop level to avoid being consumed by the ground scout role.

The Stryker cavalry troop is a capable and adaptive organization that can contribute valuable assets within the current operating environment. There have been several great articles published recently about how light cavalry troops and tank companies mounted in HMMWVs have successfully adapted to the threat environment in Iraq. However, when one looks closely at the MTOE differences between the Stryker reconnaissance troop and these other light- or HMMWV-mounted organizations, there is little difference, other than a larger vehicle for the same few dismounts to ride in. The Stryker cavalry squadron has also been very successful and has adapted well to combat experiences in Iraq. Based on a careful examination of doctrine, training, and operational experiences, it requires more assets to meet its doctrinal and operational reconnaissance and surveillance missions in any environment.

There seems to be a trend in the armor/cavalry community to force organizations to do the same with less, rather than take advantage of combat multipliers, such as increased range, stand off, mobility, and protection, to do much more with the same. Each time the armor community introduces a digital architecture, advanced communications, or long-range sights or weapons, which increase the lethality and span of control capable within any organization, we immediately trade off the advantage gained by these changes by reducing the size of our formations. In other words, every time we add a 25 to 30 percent capability to our formations, we give that advantage back by getting rid of 25 to 30 percent of the formation.[6] We should keep that advantage and use it for destroying or defeating 25-30 percent more of the enemy, or in the case of reconnaissance, identifying the enemy for destruction. It makes no sense for modern tankers and cavalrymen to gain advantage through new technology and training if we discard that advantage by simply reducing numbers. It is time for the armor and cavalry community to recognize that it truly has a place in transformation outside of the heavy force and design formations that are capable of sustained fighting and winning against any future threat, rather than looking for artificial economies of manpower and equipment best suited for the Cold War.

Notes

[1]Since the Stryker brigades helped initiate transformation, they could continue to remain dynamic, developing and changing with each new version not necessarily organized and equipped exactly like the last. In this spirit, I capture these lessons learned and express my views on needed changes.

[2]The bottom line is the troop is not optimally configured for the full spectrum of conflict. Its current strengths actually best fit it for high-intensity conflict where stealthy recon is possible. A more robust MTOE will not reduce its ability to conduct stealthy reconnaissance, and will better equip the troop for low-intensity conflict (LIC) and stability and reconstruction operations. Stealthy recon is not possible in Iraq, day or night, mounted or dismounted. Stealthy reconnaissance in LIC is possible just not as envisioned against a conventional force.

[3]The capability to conduct the convoy security mission is probably underrated. The Stryker cavalry troop is arguably the best suited organization in the Army for convoy security, and should be listed as "fully capable."

[4]Platoon mounted movement is severely effected by the loss of even one vehicle. If the platoon is moving independently, let alone by section, which is more likely in high-intensity conflict, it obviously only has four vehicles. Should one break down, it immediately requires one more for self recovery, thereby reducing the combat power of the platoon by 50 percent. If the platoon is down one vehicle already, only one vehicle from the platoon remains available and the platoon is essentially out of the fight. In less than major theater war, force protection requirements, such as those implemented in Iraq, require a minimum of three vehicles for the platoon to secure itself during movement.

[5]The communications systems need to be significantly upgraded to support the extended distances that are possible in the Stryker troop as well. This is another area where we are not taking advantage of the full potential of the Stryker. The current RV has only an FBCB2 and one or two ASIP radios for organic communications. Instead of the terrestrial-based FBCB2, all elements should have satellite-based systems, such as BFT, that can operate over any range and do not require the unit level support of a net control station or retransmission elements. The troop commander and executive officer's CVs or RVs should have 3 to 4 ASIP radios, TACSAT, and high frequency voice capabilities due to the nature of troop operations in a shared battlespace. All platoon-level RVs should have added at least one vehicle-mounted long-range communications systems instead of the current dismounted systems. Platoons should have additional dismount radio systems, such as the AN/PRC-116 or PRC-148 with ASIP/HF/TACSAT capability at the dismount level. An even better alternative would be to field these multifunction radios in vehicle mount configuration with three per vehicle. Deployment convoy escort and CTC experiences show that additional communications capabilities proved invaluable to monitor adjacent units, particularly when traversing the battlespace of other elements in or out of the brigade, while the troop is operating throughout the entirety of the brigade's battlespace as envisioned in the brigade manual.

[6]One only need look at the light RSTA organization to see this trend is getting even worse and platoon leaders will be leading under-equipped platoons of roughly the same strength as a WWII infantry squad, such as 15-man platoon versus a 13-man squad. These measures for cost and manpower savings are at best superficial and at worse stupid and irresponsible if we want to put our scouts in the best position do their missions.

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Armor Basic Officer Leaders Course III

by Captain Mark Belinsky and Lieutenant Colonel Steven Duke

Armor Officer Basic Course (AOBC) will transition to Armor Basic Officer Leaders Course (BOLC) III in July 2006. This new course is an 85-day training course, designed to teach armor second lieutenants the fundamentals of both tank and reconnaissance platoon operations.

BOLC is an officer education system (OES) initiative designed to better prepare lieutenants for combat and first unit assignments. The BOLC initiative is made up of three phases: BOLC I, II, and III. BOLC I is a pre-commissioning course for lieutenants, which includes the Reserve Officer Training Corps (ROTC), Officer Candidate School (OCS), and the U.S. Military Academy. BOLC II is a common core, combat skills training course that provides six weeks of training to all officers regardless of branch. BOLC II courses are developed to teach lieutenants leadership basics, warrior tasks, and battle drills. Fort Benning, Georgia, and Fort Sill, Oklahoma, are the BOLC II sites. BOLC III is branch-specific training during which lieutenants attend their functional basic branches. During Armor BOLC III, armor lieutenants will train to be both a tank and reconnaissance platoon leader.

The modular force has changed the requirements of our officer basic courses. The Armor Officer Basic Course has prepared armor officers to be tank platoon leaders for the Division XXI structure. Under the Division XXI structure, 62 percent of all armor lieutenant positions were in tank units and 38 percent were in recon units. In the modular force, 54 percent of all armor lieutenant positions are in recon units and 46 percent are in tank units. The BOLC transition is an excellent opportunity for the Armor School to retool the basic course curriculum and ground armor second lieutenants in recon and tank fundamentals.

The armor force and its core missions have not changed dramatically, but the versatilities and capabilities of platoons have changed. Armor lieutenants must be capable of employing one of six different platoons in the modular force. A second lieutenant assigned to a heavy brigade combat team (HBCT) may lead a tank platoon of four M1A1s or M1A2 SEPs; or a recon platoon of three cavalry fighting vehicles (CFVs) and five M1114 gun trucks. A second lieutenant assigned to a Stryker brigade combat team (SBCT) may lead a recon platoon of four Stryker recon vehicles (RVs) in a reconnaissance, surveillance, and target acquisition (RSTA) squadron; or lead a mobile gun system (MGS) platoon of three antitank guided missile (ATGM) Strykers, which are organic to a Stryker infantry company. A second lieutenant assigned to an infantry brigade combat team (IBCT) will lead a six M1114 recon platoon. A second lieutenant assigned to the last armored cavalry regiment (3d ACR) may lead a tank platoon or a six CFV recon platoon. BOLC III will train lieutenants capable of technically and tactically leading a platoon and ensure they are familiar with the various weapons platforms that make up the armor force.

The armor version of BOLC III is the Mounted Officer Basic Course (MOBC). Building on the successes of current AOBC specialty teams, five training teams will conduct MOBC. The foundation, weapons, tactics, stability and reconstruction operations (SRO), and field training exercise (FTX) teams will train recon and tank fundamentals to armor lieutenants. AOBC and MOBC differ significantly, in that many of the common-core classes and mandatory training are completed during BOLC I and BOLC II. The cost of BOLC

I and BOLC II for armor students is the time allocated for BOLC III. During AOBC, students were trained on tank platoon fundamentals in 92 days. In MOBC, students will train recon and tank fundamentals in 85 days. A more effective training methodology (more hands on during field training versus classroom/platform presentations) will enable better trained lieutenants in less time. Class size for BOLC III will increase from the current AOBC size of 64 students to 72 students. At various collective training times, these 72 students will be divided into a reconnaissance or tank track and then rotated to the opposite track once training is completed on the initial track.

BOLC II graduates in-process in MOBC with the foundation team. The students spend three days with the foundation team where they study the armor branch's history, qualify with the M9, and learn the vehicle protective mask.

The weapons team is charged with teaching crew-level weapons systems for tank and recon platforms to create competent vehicle commanders and train students on the capabilities and maintenance requirements of the weapons systems they will employ as platoon leaders. The 72-man class will be divided into a tank track and a recon track; each track culminates with a live-fire gate that each student must pass. The weapons team gate requires successful completion of the tank crew gunnery skills test (TCGST), Bradley crew gunnery skills test (BCGST), and proper execution of live fire crew drills and fire commands. This gate is not a weapons system qualification because of the time constraints and inability to pair student tank commanders with experienced gunners.

The tank phase of the live fire team is similar to the traditional AOBC. During the tank phase, students focus on unit conduct of fire trainer (UCOFT), TCGST, and maintenance. During gunnery, students must demonstrate proficiency as a tank commander on an M1A1 or M1A2 SEP tank. During the recon phase, students focus on Bradley conduct of fire trainer (BCOFT), BCGST, and light cavalry weapons, which include the M249, M240B, flex M2, and MK19. Passing students will then rotate to the opposite track and repeat training on the different platforms. Once students pass both live-fire gates for tank and recon, they transition to the tactics team.

The tactics team trains students on the fundamentals of troop leading procedures (TLP) and tactics common to recon and tank platoons. The initial portion of tactics training is common core and students are also equally divided into a tank platoon track and a recon platoon track. Captains are the primary instructors during the tactics phase, with a ratio of at least one captain to 36 students. This particular portion of the training offers frequent quizzes and quick decision exercises (QDEs) during class. The quick decision exercises provide students with a historically based tactical situation requiring an immediate decision. Students are required to brief their plans to the class and are then presented with the historical outcome.

The core tactics phase trains students on the fundamentals of tactical movement, maneuver, battle drills, intelligence preparation of the battlefield, reporting, battle tracking, and operations orders (OPORDs). Repetition of troop leading procedures is stressed with a new company/troop order delivered by an instructor almost daily. Each student is required to produce platoon sketches and an order for every company/troop OPORD. Once every student grasps this fundamental base of tactics, they transition to a recon phase and an armor phase.

The tactics recon phase trains the fundamentals of recon and security by using the technique of classroom learning, terrain board exercises, and then executing the recon task in the field. Recon phase students learn route recon in the morning; rehearse route recon on the terrain board during the same afternoon; and the next day, transition to the field for a situational training exercise (STX). The Scout Leader's Course program of instruction was used as the baseline for Armor BOLC III's reconnaissance training.

The recon dismounted practical exercises consists of a short demonstration by instructors, followed by evaluated recon missions. Students move back to the classroom and continue this same learning pattern for area/zone recon and screen operations tasks. Once students complete the dismounted screen exercise, they conduct a written tactics and terrain board exam gate. The recon phase culminates in a four-day platoon recon STX. During the recon STX, students use the M1025 gun truck as their base platform and conduct crew, section, and platoon lanes. Once the recon phase is complete, students move back to the classroom to begin the armor tactics phase.

The armor tactics phase uses the terrain board and close combat tactical trainer (CCTT) as its primary training tools prior to the tank platoon STX. Students are issued company level OPORDs and must produce platoon orders, conduct rehearsals, and execute offensive and defensive missions on terrain boards. This process allows for a rapid transition to executing

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"The armor version of BOLC III is the Mounted Officer Basic Course (MOBC). Building on the successes of current AOBC specialty teams, five training teams will conduct MOBC. The foundation, weapons, tactics, stability and reconstruction operations (SRO), and field training exercise (FTX) teams will train recon and tank fundamentals to armor lieutenants."

platoon- and company-level missions in CCTT while reinforcing practical application of tactics, reporting, crew-level duties, and Force XXI battle command, brigade and below (FBCB2).

Every student is evaluated on TLP and mission execution through CCTT. Each student must pass the CCTT platoon leader evaluation gate before moving on to the tank platoon STX. The tank platoon STX introduces the student to field craft on a tank and executes platoon missions on real terrain. Platoons begin with crew-level lanes, which train how to fight a tank, and progress to section- and platoon-level lanes. After the tank platoon STX, students get a bit of a break from field training to execute an urban operations tactical exercise without troops before heading back to the field for the culmination FTX.

The culmination FTX is a nine-day exercise that trains tank and recon platoons to work together in a full-spectrum environment. The culmination FTX uses the Gauntlet training concept that places Armor Captains Career Course (AC3) students in charge of formations, which consist of platoons manned by lieutenants and soldiers from the support company, 1st Squadron, 16th Cavalry. The culmination FTX consists of a mix of tank platoons and recon platoons in company/team-like organizations. Students receive at least one formal evaluation as a platoon leader conducting a tactical mission during the culmination FTX. Again, the class is divided between a tank track and a recon track and students rotate at the midpoint of the FTX to the opposite platoon type.

Recon platoons are made up of M3 CFVs and M1025s, and M1A1 or M1A2 SEP tank platoons. The platoons conduct zone recon, screen, hasty attack, and hasty defense missions. Throughout the operation, platoons must constantly react to an OPFOR contemporary operating environment (COE) platoon of support soldiers playing roles as civilians on the battlefield and terrorists ambushing sites with improvised explosive devices and rocket-propelled grenades and causing civil disturbances. The OPFOR platoon forces students to deal with a continuous running scenario and comply with the rules of engagement (ROE) and rules of interaction (ROI). After successful completion of the culmination FTX, students recover their vehicles and transition to the SRO phase of BOLC III.

The SRO team prepares students for deployment to the COE. This is the final collective training event in armor BOLC III because it is likely to be the first combat environment graduates will face. The SRO team conducts instruction on reflexive fire, room clearing, cordon and searches, personnel and vehicle searches, raids, checkpoint operations, forward operating base security, convoy/patrol missions, and armor integration in an urban environment.

The SRO team focuses on hands-on training and the 10 days culminate in a 72-hour continuous operations scenario in an urban environment, tanks and M3s in support. The base platform for the SRO training is the M1025 gun truck. A tank platoon and M3 section will also complement the urban operations training, and as Strykers become available, they will also be integrated into training.

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Leader Development at the Company Level

by Captain C.J. Kirkpatrick

"Squint with your ears. The most important skill for leaders is listening. Introverts have a great edge, since they tend to listen quietly and usually don't suffer from being an 'interruptaholic. Leaders should 'squint with their ears.' Too many bosses are thinking about what they will say next, rather than hearing what is being said now."[1]

— Major General Perry M. Smith

Lieutenant Jones reported for duty to his company commander: "Sir, Lieutenant Jones reporting as ordered!"

"At ease, Lieutenant Jones. Good to have you here. My name is Captain Smith. You're going to be in 3d platoon. Go check in with Sergeant First Class Davis, he'll let you know what's up."

"Umh, okay sir. Thank you."

Lieutenant Jones checked with SFC Davis, and got the lowdown on his platoon. He then checked with the XO and asked if the commander was going to conduct an initial counseling session. "Nah, he never does, says he does informal counseling everyday. Just do what Sergeant First Class Davis and I say and you'll be alright."

(Captain Smith and Lieutenant Jones nine months later) "Lieutenant Jones, this is your rater OER counseling. First, I'd like to say, it's been a pleasure working with you and I'm sorry to be leaving. Honestly, I was a little worried about you when you got here and I wasn't sure you'd make it as a platoon leader, but you've impressed me and I think this OER reflects that. Do you have any questions?"

Army Values and Ideology

The above scenario is all too familiar to most company grade officers. No one should be surprised about their performance during officer evaluation report (OER) counseling. Who failed Lieutenant Jones? Was it the company commander; the XO; Lieutenant Jones' prior military education; or was it all three?

The modern battlefield is increasingly complex with diffuse responsibilities and ever decreasing decision-reaction cycles. As technological parity is achieved, or the thinking enemy negates the United States' technological edge, "the most effective and efficient way for the Army to maintain its competitive edge is by enhancing the effectiveness of people and organizations."[2]

All leadership is based on natural abilities, learned traits, and previous experiences. Specifically, the future force will value self-awareness and adaptability; the two traits are inseparable. An officer who is not self-aware changes for change's sake; an officer who is not adaptable cannot recognize a change is required, nor see it as a positive thing.[3] At the company grade level, this is especially true.[4] Leadership at this level is direct leadership, encompassing the squad leader through the battalion commander. At this level, no leader can become adaptable or self-aware without developing — and being developed by — counseling, coaching, teaching, and mentoring.[5]

At the core of our Army's dominance is a common understanding of doctrine and

values, enhanced by constant self-evaluation and adaptability at the organizational level as evidenced by after-action and bottom-up reviews. The Army is missing key gains in "enhancing the effectiveness of people and organizations" by failing to adequately synergize and promulgate a leader development system focused on individual development of self-awareness and adaptability at the level that requires it the most — the direct leadership level.[6]

Setting the Stage for Leader Development

Counseling is defined as "*subordinate-centered* communication that produces *actions* necessary for subordinates to *achieve individual or organizational goals*."[7] This should be the focus of your average company-level counseling session. However, all too often, the initial inbrief and counseling goes something like this: "Okay, this is what I expect of you, here's my command philosophy, here's my OER support form; have yours turned in to me within 30 days, and it should look just like mine, only rewritten at the platoon level." Fundamentally, this process is not in conflict with Army regulations. Actually, this is probably an optimistic view of what happens; what Lieutenant Jones experienced is more the norm.

Instead, if we discuss our organizational vision, values, and priorities, then all the focus is on the organization.[8] We then discuss why Lieutenant Jones is important to the organization.

Lieutenant Jones reported to his company commander for duty: "Sir, Lieutenant Jones reporting as ordered!"

"At ease, Lieutenant Jones, have a seat. Good to have you here, I am Captain Smith. First things first, here is my command philosophy. Of particular note are the company's vision and its core values. The Apaches are a cohesive combat team, whose members are mentally tough, physically fit, and motivated. We have the tools, the skill, and the will to destroy an enemy on any battlefield. Our core values are: we are technical masters of the M1A2 SEP; our PT program is battle focused; we care for soldiers and families; we train to excellence at every opportunity; and our company leadership is disciplined, motivated, and our leaders are technical experts. This company vision supports our company mission essential task list (METL), which includes the following tasks… As a part of this organization, you need to internalize our vision and embody our core values. As a platoon leader, you set the example and attitude of 15 soldiers. This team cannot meet our missions or represent our vision without your whole-hearted participation."

"Okay sir, sounds great. How do I fit in?"

Next, discuss your OER support form with Lieutenant Jones, showing how your performance goals and individual goals support your rater's OER support form, and the higher organizational vision. Offer Lieutenant Jones the opportunity to develop his own support form and schedule an appointment to review it and develop an individual development plan (IDP).[9]

"Lieutenant Jones, let me show you my OER support form. I developed this form based on my initial counseling with the battalion commander. Specifically, I want to focus on two performance goals: ensure the Apaches are combat ready for the upcoming training center rotation by planning and executing tough, realistic training leading to a "T" on all METL tasks; and maintain 100 percent accountability of all Apache equipment, and ensure an operational readiness of over 90 percent. Based on this OER support form, I want you to develop your support form for your platoon. Your fellow platoon leaders, the XO, and your platoon sergeant are great resources for developing your own support form to standard. We'll get back together in two weeks and create your development plan based on your results."

"Okay sir, I'll see what I can come up with."

Finally, discover what his *problems* might be and develop a plan immediately to resolve them. This will conclude Lieutenant Jones' initial or reception counseling.[10]

"Finally, do you have any initial problems we need to cover? Any housing issues, pay problems, or transportation complaints?"

"No sir, I'm straight."

"Sounds good. Before you leave, I need you to read over this developmental counseling form, which basically outlines everything we just discussed. Pending your questions, just sign right here, and you're dismissed."

This empowers Lieutenant Jones and immediately integrates him into the organization. Lieutenant Jones immediately understands that his input is valued and his personal concerns are appreciated. Again, this is not revolutionary, but in accordance with current guidance on leader development and counseling, and tools readily available.[11]

In the subsequent counseling session, take time to examine and refine the OER support form Lieutenant Jones brings, and develop his IDP. This requires some

"An officer who is not self-aware changes for change's sake; an officer who is not adaptable cannot recognize a change is required, nor see it as a positive thing. At the company grade level, this is especially true. Leadership at this level is direct leadership, encompassing the squad leader through the battalion commander. At this level, no leader can become adaptable or self-aware without developing — and being developed by — counseling, coaching, teaching, and mentoring."

"Everyone desires a role model to use as a personal mirror for their own actions, beliefs, and values. In the Army, a mentor should serve this role. Company-grade leadership in the Army considers mentoring to be a serious shortcoming in leader development."

education and use of the development support form (DSF).

DSF as a Part of the Leader Development Process: Coaching

The DSF is sparsely referenced, often underappreciated, and sometimes misunderstood.[12] It has been used to pass on personal inspirational insights, copy performance objectives from the OER support form, and establish generic goals which cannot be measured or quantified.[13]

According to U.S. Army policy, the DSF concept is designed to "*drive development and integrate it with performance.* As with the support form, the rater directs the process, with *active participation* from the rated officer. The form is used to build a *developmental plan* based on tasks that *target major performance objectives* listed on the OER support form."[14]

Clearly, the Army has a reason for using this form. The OER support form provides nested performance objectives, but these may or may not be quantifiable, measurable goals. The OER support form is the emphasis on what the officer should *be*. The DSF offers you the opportunity to provide your subordinate with what they must *know* (personal developmental goals) and *do* (measurable, quantifiable developmental goals). This is the basis of the IDP. Instead of providing inspiring quotes or generic goals, cross-reference the DSF with the OER support form and use it to quantify performance objectives.

This plan is not completely directive. Encourage self-awareness and develop the DSF jointly with Lieutenant Jones. Encourage Lieutenant Jones to highlight his weaknesses and focus on achievable, quantifiable goals.[15] Also, while the goals should be quantifiable, encourage long-term goal orientation (five years or more). This may exceed the rating period, but not the mentorship. Also, it will provide focus for future IDPs.[16]

"Lieutenant Jones, thanks for coming by. Let's see what you came up with for your OER support form."

"Sir, here are my two focused performance goals: ensure 3d platoon is combat ready for the upcoming March training center rotation by executing tough, realistic training during company and platoon STX 2. Maintain 100 percent accountability of 100 percent of my personnel and equipment, 100 percent of the time; and maintain operational readiness through aggressive maintenance management."

"That's great, Lieutenant Jones. Your performance objectives are right on track. Now, let's discuss what you think your weaknesses are as a leader."

"Well sir, I've been told I'm kind of quiet."

"No problem. Based on your weaknesses and your performance objectives, what do you think are some measurable goals we can set for your performance?"

"Uhhh… I guess I could brief operations orders and stuff more often?"

"Okay. How about this? You will brief a platoon operations order from a company operations order at least six times prior to deploying to the training center no later than 29 November 06. That will support your first performance objective. We'll take that goal and put it in your DSF under the communications block. We'll also put in: develop a six-week schedule of -10 level maintenance tasks for company training during motor stables, include in company training calendar NLT 1 December 05. Company XO approves schedule NLT 18 November 05 under the planning block. That goal supports both your first and second performance objectives. Now, let me show you how this DSF supports the rest of your OER support form…"

Now, you are ideally positioned to conduct quarterly (minimum) or monthly (ideal) counseling using the DSF and OER support form as points of reference.

Performance Counseling and Teaching

Performance counseling is a quarterly requirement for all personnel. Performance counseling (when done) is often an awkward affair, with the rater stumbling in the dark to remember what the discussion points were during initial counseling and the ratee trying to pretend he has focus and direction.

Armed with an OER support form, which is integrated with the DSF, performance counseling is really an in-progress review (IPR) of ongoing actions by the rater and ratee. Positive feedback and areas that need improvement or more attention are noted on the developmental counseling form.[17] Much like an after-action review (AAR), we can note the "sustains and improves," and then writing the OER is a snap. And if we decide that's good enough, we're failing our subordinates yet again.

AARs never end with "sustains and improves" identified. Every leader assigns responsibility for the "sustain or improve," and a comprehensive AAR develops plans to achieve the desired effect. Why can't we do this during the counseling process? Both parties should review the IDP, which was jointly produced, and address the actions that are not working, stop actions that the subordinate has developed beyond, and revise ongoing actions to reflect the subordinate's development.[18]

"Lieutenant Jones, welcome. This is your quarterly performance counseling. Let's review your OER support form… Looks like you've met your performance objective for developing individual train-

"Experience leads to learning, permeating a common use and understanding of proper leader development. A deeper understanding propagates the importance of proper leader development. Direct leaders will make the time to conduct leader development when there is a common acceptance of its importance."

ing; I'll just make a note on the back of your support form. Okay, now looking at your DSF, it appears you briefed your six operations orders. How do you feel about your communications skills now?"

"Sir, I'm definitely improving, but I think I still need some work. The XO sat in on the last two briefings and he gave me some pointers."

"Okay. We'll revise that goal for you to brief three more prior to the training center rotation and give a professional development class to the company leadership on rules of engagement. That should help round you out."

"Sounds good, sir."

"How about your maintenance program?"

"That went really well. The XO helped me revise my plan, and I supervised the training. I received good feedback from the platoon sergeants."

"Okay, great. You've met that goal, so we'll set a new planning goal and review the rest of your DSF…"

Writing the OER is still a snap, but now Lieutenant Jones has an ongoing action plan, and isn't stalled out.

Mentoring and Leader Development

Everyone desires a role model to use as a personal mirror for their own actions, beliefs, and values. In the Army, a mentor should serve this role. Company-grade leadership in the Army considers mentoring to be a serious shortcoming in leader development.[19]

Mentoring is defined as, "The voluntary, developmental relationship that exists between a person of greater experience and a person of lesser experience that is characterized by mutual trust and respect."[20] Generally, this relationship is separated by rank and the mentor and mentee are not in the same chain of command.

Company grade officers must be aware of the Army's policy on mentoring and understand current policies and values on mentoring. If company grade officers do not understand mentorship in their current grade group, they certainly won't do it right when they become mentors. Company commander's have a responsibility to develop subordinates in every way possible, which may include using a mentor.

"Lieutenant Jones, I'd like to introduce you to Major Percy, he is the Brigade S4 and would like to have a chat with you before you head home. I'll see you tomorrow at PT."

"Hey Lieutenant Jones, it's good to meet you. I'd like to be your mentor while you're here at Fort Hood. Basically, I'd like to discuss your experiences as a platoon leader and as a leader in the Army. Nothing formal, we'll just get together for lunch every month or so…"

Clearly, leader development is a well-defined system in the Army and is constantly evolving through feedback from the officer corps. However, the system does not always work. The first and most likely excuse is lack of time.[21] At the direct level of leadership, demands on a precious resource, such as time, are immediate and all-encompassing. Considering, filling out, tracking, and updating counseling takes time, and is unfortunately the first victim of an intense operational tempo. However, an initial investment in leader development makes the remainder of the process a benefit to commanders, subordinates, and the entire unit at a miniscule cost.

The second and most unfortunate reason is lack of knowledge. The synergy of the OER support form, DSF, developmental counseling form, and OER is not emphasized in the officer educational system (OES).[22] At the commissioning source, students are taught only the barest fundamentals regarding counseling, which is only focused on subordinate counseling. The officer basic course experience isn't much more detailed. Little, if any, attention is devoted to what subordinates should expect from superiors. Too often, leaders learn what they were supposed to do long after the opportunity has passed to implement leader development in their organization.

The OER system was adapted to provide company-level officers an environment in which to develop without fear of hyper-competitive "block-checking." This breakthrough resulted in second lieutenants through captains being required to have the DSF integrated into their development, which set the stage for true transformation of leader development at the direct leadership level. If the OES emphasized a comprehensive leader development system to our most junior officers at their commissioning source and basic courses, then they would know what to expect when they enter the force. Similarly, if captains were immersed in a comprehensive discussion of the system, they would have a standard for their organization when they assumed command. Subsequently, all leaders would understand the importance of a comprehensive integrated leader-development program.

Experience leads to learning, permeating a common use and understanding of proper leader development. A deeper understanding propagates the importance of proper leader development. Direct leaders will make the time to conduct leader development when there is a common acceptance of its importance.

"Lieutenant Jones, this is your OER counseling. First, it's been a pleasure serving with you. Based on all our discussions, let's review your significant contributions. Okay, based on all the goals we established on your DSF, I think you achieved a successful training center rotation. Specifically, you received a com-

mendation from our company OC… "Based on your contributions and goals, I wrote the following comments. Let me know if you have any questions…"

"No sir, this is exactly what we've been discussing for the past nine months."

Notes

[1]Major General Perry M. Smith, "Learning to Lead," *Marine Corps Gazette,* January 1997; quote contributed by Tony Burgess, taken from *http://companycommand.com* on 16 October 2005.

[2]U.S. Army Regulation (AR) 600-100, *Army Leadership*, U.S. Government Printing Office (GPO), Washington, D.C., September 1983, p. 1.

[3]*The Army* Training *and Leader Development Panel (ATLDP) Officer Study Report to the Army*, 25 May 2001, p. 2.

[4]Department of the Army Pamphlet (DA PAM) 623-105, *The Officer Evaluation System "In Brief,"* GPO, Washington, D.C., June 1997, p. 10.

[5]Colonels Daniel H. French and Paul Tiberi, *Coaching, Teaching, Mentoring, Counseling: Turning Buzzwords into a Process*, Center for Army Lessons Learned (CALL), *https://call2.army.mil/search.products/TRNGQTR/articles/coaching/coach.asp,* accessed 16 October 2005.

[6]AR 600-100, *Army Leadership*, p. 1.

[7]U.S. Army Field Manual (FM) 22-100, *Army Leadership*, GPO, Washington, D.C., May 1987, p. C-1.

[8]Allen, Nate, and Tony Burgess, *Taking the Guidon: Exceptional Leadership at the Company Level,* Center for Company-Level Leadership, Delaware, 2001, pp. 6-21.

[9]French and Tiberi, *Mentoring: What Will Your Legacy Be as a Rater?,* CALL, *https://call2.army.mil/search.products/TRNGQTR/articles/Mentoring/legacy.asp*, accessed 16 October 2005. An IDP is easily developed and linked to the junior officer development support form.

[10]FM 22-101, *Army Leadership*, GPO, Washington, D.C. , June 1985, p. 39.

[11]Ibid, p. 38; DA PAM 623-105, pp. 5-7; and Allen and Burgess, pp. 141-143.

[12]Through research, the primary discussion of the DSF is in DA PAM 623-105 and AR 623-105, the official proponent. Few articles, books, or communal leadership tools offer more than a passing reference.

[13]*ATLDP Officer Study Report to the Army*, 25 May 2001, p. OS-3. This report discusses inadequacies in the current system. Specific observations of misuse of the DSF are based on author's personal experience and general conversation with peers.

[14]DA PAM 623-105, p. 10.

[15]Allen and Burgess, pp. 50-51.

[16]French and Tiberi, *Mentoring: What Will Your Legacy Be as a Rater?,* p. 4.

[17]Ibid., p. 1.

[18]French and Tiberi, *Coaching, Teaching, Mentoring, Counseling: Turning Buzzwords into a Process,* p. 3.

[19]*ATLDP Officer Study Report to the Army*, 25 May 2001, p. OS-10.

[20]*Army Mentorship Handbook 2005*, Army Mentorship Resource Center, accessed at: *http://www.armyg1.army.mil/hr/mrc.asp#dod*, 16 October 2005.

[21]French and Tiberi, *Mentoring: What Will Your Legacy Be as a Rater?,* p. 1.

[22]*ATLDP Officer Study Report to the Army*, pp. OS-13–OS-15. This study recommends specifically that a leader development model be taught in detail throughout the OES from the lowest to the highest level.

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BOLC from Page 35

To keep training current and relevant as new tactics, techniques, and procedures (TTP) emerge from the force, SRO team instructors are selected based on recent experiences in theater. The SRO team handles the challenges of the ever-evolving tactics of anti-Iraqi forces (AIF), as well as our own TTP, by reinforcing fundamentals and relying on instructors recently back from theater. At the completion of the SRO phase, students return to the foundation team to receive some final training to polish their skills. This training instructs on how to train a platoon, platoon administration, and discipline. Students then out-process, conduct a dining in, and graduate.

MOBC will produce better trained lieutenants who are familiar with all armor platforms and grounded in the fundamentals needed to be successful mounted platoon leaders. Officer instructor interaction with second lieutenants will increase dramatically. Second lieutenants will be coached and mentored consistently during the tactics phase and culmination FTX by captains and senior noncommissioned officers.

The backbone of the course is still the sergeant first class (SFC) platoon trainer, known to the students as "Black 6." Black 6 stays with the platoon from in-processing to graduation and serves as the student's enlisted advisor.

Standards for successfully completing the numerous gates will be higher than current AOBC standards and students will continue to be exposed to more training opportunities, including ruck marches and combatives. As in current AOBC, some lieutenants will not successfully complete the course and will either be recycled and retrained, sent to another branch, or discharged from the Army.

The first BOLC III pilot course began on 3 March 2006 and graduated on 15 June 2006. Much of the resources needed for the new BOLC III pilot are being paid for "out of hide" by the Armor Center and the 16th Cavalry Regiment; however, full implementation is planned for BOLC II in June 2006 and BOLC III in July 2006. There will likely be some resourcing challenges for full implementation, although more resources are anticipated to come online with each successive fiscal year. Regardless, armor lieutenants will gain a greater understanding of all armor operations through BOLC III, and will be better prepared to assume command of any mounted platoon to which they are ultimately assigned. Lieutenants bound for reconnaissance platoons are still encouraged to attend the Scout Leader's Course; however, when this does not occur, an arriving lieutenant will still be grounded in the fundamentals of reconnaissance and surveillance operations, along with tank platoon operations.

Feedback from the force on the performance of MOBC students is critical for making improvements. An online survey is currently available for recent graduates and their supervisors at *www.knox.army.mil/survey/AOBGraduateFieldSurvey* and for commanders at *www.knox.army.mil/survey/AOBSupervisorFieldSurvey*. The input provided will continue to help produce better trained armor platoon leaders.

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Mortar Platoon Training Focus to Meet the Evolving Battlefield

by Captain Stephen Ward

In the past, the 120mm heavy mortar platoon's key focus was no different than that of a light mortar platoon. The focus of their training was oriented on how fast they could deploy and fire accurately. Although this is still a critical mission-essential task, a heavy mortar platoon brings a key element to the fight that forces them to expand their training focus.

The M1064 (mortar carrier variant of the M113 chassis) makes the heavy mortar platoon an armored maneuver element, which opens the platoon to new missions far from its traditional role. Convoy escort, cordon and search operations, and raids are all missions that a heavy unit must be able to accomplish. The current gunnery training in a heavy battalion, or combined arms battalion (CAB), only tests the platoons in its traditional role. The training needs of the platoon have expanded. To best prepare soldiers for combat, they must be exposed to the types of missions they will be conducting.

Just prior to Operation Iraqi Freedom (OIF), the 120mm mortar platoons reorganized from six M1064 mortar carriers and two M577 fire direction centers (FDC) to four M1064 and one FDC. It was decided that four mortars could still effectively support a maneuver battalion, which would create more platoons with fewer mortar vehicles.

Losing one FDC and two mortar vehicles prevents a platoon from effectively operating as separate sections, eliminates the redundancy of fire mission calculations, and reduces the battlespace that the platoon can effectively engage. Whereas a platoon could operate as two separate, three-mortar sections and cover a wide sector, it no longer has this capability due to the loss of one mortar vehicle per section and one FDC. This reduces the linear coverage of the platoon from 900m (75m burst radius per gun) to 600m with a four mortar vehicle platoon. To compensate, often the platoon leader's M998 becomes a secondary FDC. This only works if it is a cargo back, and even then, it does not have all the utilities of an M577.

After the initial advance into Iraq, mortar firing was severely reduced due to the urban environment, a different battlefield requiring a different skill focus. Iraq is more of an environment for heavy mortar platoons because they bring flexibility to the fight. A 120mm mortar platoon is capable of firing both 81mm and 120mm ammunition, but more importantly, it brings an armored vehicle to the fight.

"During this segment of the training, the entire crew manned their sector on the vehicle and the section moved out as a unit. Contact would be made and the section sergeant would make the decision to advance through contact or break contact. The focus was to increase the gun crews' situational awareness about the .50-caliber traversing to engage targets, as well as maintain their sectors of fire."

Mortar platoons need to shift focus from purely effective mortar firing to survivability. A mortar is useless if the crew cannot get to the battle safely. A simple solution is to apply tank direct fire concepts to the mortar platoon. Any senior mortarman will probably tell you that prior to deployment, he never fired an M2 .50-caliber from a moving M1064. Contact drills and maneuvering in contact are not normal situations for a mortar platoon. The modern battlefield forces the mortar crew to be an active part of the fight. Mortar crewmembers must know how to orient on the move and what to do if they make contact. This is easily trained once they understand that regardless of what occurs out of sector, mortarmen must maintain their sector of fire. Squad leaders must now think and talk to their fellow vehicles, much like a tank commander — they must learn to maneuver.

Maneuvering begins at a basic level that teaches squad leaders and drivers direct fire control. The focus is communication between the crews. Crewmembers have to be taught skills, such as shooting on the move, bounding, and supporting the maneuver of other vehicles. When this concept was introduced to my mortar platoon, it took a few attempts before they grasped the idea. This was something entirely new from the vehicle perspective.

Our platoon first began training with a single vehicle, on the move, shooting multiple targets. The platoon was then placed on the range with another mortar carrier and they fought the range in sections no different from two tanks attacking the range. They quickly grasped the concepts of covering each other on the move and engaging targets in their wingman's sector due to reloading or terrain.

"The M1064 (mortar carrier variant of the M113 chassis) makes the heavy mortar platoon an armored maneuver element, which opens the platoon to new missions far from its traditional role. Convoy escort, cordon and search operations, and raids are all missions that a heavy unit must be able to accomplish. The current gunnery training in a heavy battalion, or combined arms battalion (CAB), only tests the platoons in its traditional role."

The platoon practiced advancing and breaking contact as a section and squad leaders quickly learned they had more responsibilities than just their vehicle. Once the squad leaders mastered these tasks, we added the whole crew to the equation. Since a 360-degree live-fire range was not available, this training was conducted as a blank fire. During this segment of the training, the entire crew manned their sector on the vehicle and the section moved out as a unit. Contact would be made and the section sergeant would make the decision to advance through contact or break contact. The focus was to increase the gun crews' situational awareness about the .50-caliber traversing to engage targets, as well as maintain their sectors of fire.

After two days of training, we added all-inclusive training segments that covered losing a vehicle, actions to establish a perimeter, recovering the crew and weapons, and evacuating wounded. This training made soldiers realize the depth of the new missions they would be conducting in Iraq and how critical it was to master these critical tasks prior to deployment.

In the conventional role, there is new equipment now available to the mortar platoon. On the future battlefield, the Army has transformed into a digital army. This has created new equipment, such as the XM31 mortar ballistic computer, a Windows-based fire control program digitally linked to each gun allowing for speed and accuracy in processing fire missions.

It is imperative for mortar platoons to change their training focus. The number of fire missions they conduct is decreasing; the number of other missions they conduct is increasing. To accomplish these missions, mortar platoons must change focus from a traditional role to a full-spectrum operations role. During three days of training, my platoon learned that even simple concepts take time to master. Mortar platoons must be given an opportunity to train for the number of missions they will conduct in theater or pay the consequences in blood.

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Integrating Iraqi Forces into Company Team Combat Operations

by Captain Justin D. Harper

The U.S. Army has used local national elements to great effect from the Revolutionary War to the present. Scouts, interpreters, informants, and many other critical skills have been filled by the indigenous population of almost every nation where the Army has operated throughout history. Native American scouts formed a critical component of U.S. Army operations throughout the American West for decades, and were used to great effect in the numerous Indian wars fought by the U.S. Government. Even modern conflicts of the 20th century furnish examples: during World War II, resistance cells in German-occupied Europe provided critical intelligence to the allies during the American offensive toward Germany; in Vietnam, Army of the Republic of Vietnam (ARVN) soldiers and Montangard tribesmen were recruited to fight communist forces; and in Afghanistan, Mujahadeen fighters were resourced by the United States to fight the Soviets. Using these forces was not the most agreeable option; however, it was necessary due to political, military, and resource constraints placed on the United States.

Just as the United States could not choose which nation it supported in the past, future battalion and company commanders do not necessarily have the ability to choose which local national units are assigned to them. In many cases, each battalion task force will have an Iraqi unit with which they will train, equip, and conduct operations. Given a perfect world, with unlimited resources and time, this would allow a rigorous program of training over the course of several months, culminating in a capstone exercise similar to combat training center rotations that U.S. Army units conduct prior to deployment.

Many U.S. Army units have excellent training programs in place and are well resourced and generate well trained Iraqi units capable of operating with coalition forces in various ways. However, we must assume that the next place we are sent as either commanders or staff officers, we will not be blessed with the same quality training program for local national forces. This fact alone brings forth the necessity to learn how to integrate a unit of inexperienced soldiers who must fight through a language barrier, to ensure the safety of both U.S. and local national personnel in such an environment, and to find the best way to conduct necessary training and execute multinational operations. We must have the mental model built if we are to be successful in such an environment.

Training new soldiers can be very manpower intensive. This becomes a significant problem if you are a heavy company team conducting continuous operations in sector. The sixty-three personnel of a tank company do not give the commander much redundancy when accounting for various red cycles, environmental and emergency leave, and other requirements that drain combat power. Even attached infantry platoons do not ease the burden. Mechanized infantry is in high demand throughout the urban battlefield, and reducing combat power committed to the urban fight may not be a viable option.

Commanders must decide where to assume risk. The answer may come from the frequent practice of tank platoons deploying without tanks. Making the transition from M1 to M1114 has several advantages from a personnel standpoint, if not from an operational one. First and foremost is the reduced maintenance requirement for a truck. While a tank can be operated with a three-man crew, it is much more difficult to maintain the vehicle under such circumstances. The tank platoon must not be designated to provide personnel to a training mission, as long as they are required to maintain four tanks. Without tanks, the tank platoon be-

comes the primary source for non-commissioned officer trainers for indigenous personnel. Assuming a requirement to maintain four trucks and field a three-man crew for each, two staff sergeants and two sergeants could become available for tasking as your company team Iraqi advisors. Although you must assess the competence of these individuals before assigning the daunting task of training local nationals, there is a good chance you can find qualified and responsible individuals in this group.

Prior to training, an appropriate sized unit must be determined. An infantry squad is the largest unit appropriate to begin operations in a company team. A squad-sized element provides ease of command and control, as well as supervision. While it is reasonable to assume that at least some of the local nationals you encounter have a limited knowledge of English, this is not enough to conduct operations. Availability of interpreters makes the unit size a problem. This will be mitigated in the long term as the Iraqi command structure gains experience and becomes more solid, but for the short term, a smaller number of soldiers is preferable. Finally, newly enlisted Iraqi soldiers are not as reliable as we expect in the U.S. Army. Absenteeism is frequent and it is rare to find an Iraqi unit of any size at full strength, especially one that is newly formed. This is the reason a fire team may be too small to operate. You must expect the squad to operate understrength.

"The minimum training necessary for each Iraqi soldier is based on the experience level of the Iraqi chain of command, along with the level of training responsibility with which your company is tasked. Because you might get a last-minute tasking to use an Iraqi unit of unknown quality, it is best to have a plan to rapidly assess the unit's capability."

The minimum training necessary for each Iraqi soldier is based on the experience level of the Iraqi chain of command, along with the level of training responsibility with which your company is tasked. Because you might get a last-minute tasking to use an Iraqi unit of unknown quality, it is best to have a plan to rapidly assess the unit's capability.

The advisory team you have established should take the lead under the supervision of the company commander. Our assumption at this point is that soldiers have completed the minimum training necessary for Iraqi forces. This being the best case, your advisor, along with the supervisory platoon leader, should work to integrate the Iraqi unit into a program of systematic rehearsals. This program will vary based on what kind of training you plan to conduct, but the most critical element will always be weapons safety and discipline. No matter what type of training you conduct, the most dangerous weapon a trainer will face, apart from the ever present versions of the improvised explosive devices, is an undisciplined and untrained soldier. If you rehearse nothing else, weapons safety, clearing procedures, and fire discipline are critical with a new Iraqi unit.

A heavy company team will most likely conduct mounted movement as part of every operation. Most Iraqi units are equipped with modernized versions of Soviet-era vehicles or unarmored civilian trucks. While this is the vehicle they are likely to operate with for the long term, it is more appropriate to use the organic armored transport available to company team commanders. This ensures maintenance is properly conducted on the vehicles, that soldiers acting as advisors are not exposed in a completely unprotected truck, and that Iraqi forces do not stand out as a soft target in your company convoy. The M113 is the logical choice as it provides limited armor protection, enough room to transport an infantry squad, interpreter, advisor, and is organic to your company. If you need additional M113s to augment your company, it is possible to remove the medic markings from your tracked ambulance and give your company two M113s for this tasking.

"Locals provide a level of cultural understanding that your soldiers will never obtain, they can identify foreigners by accent or other characteristics and are more likely to find contraband hidden in vehicles or dwellings used by insurgent forces."

Typical operations for a squad of Iraqi soldiers will be relatively simple parts of a company-level cordon and search or reinforcing a checkpoint. During each and every one of these operations, it is necessary to provide close supervision of Iraqi soldiers. Initially, it is best to have a 1-to-4 ratio of advisors to Iraqis, which ensures accountability and safety, as well as ensuring Iraqi soldiers complete assigned tasks. Long duration checkpoint missions are a case in point. Newly arrived Iraqi units may be motivated but they may not understand how to maintain discipline on long-duration operations. This can only be counteracted by strong on-site NCO supervision. This is a good example of why it is beneficial to have multiple advisors, even for small units. Multiple advisors allow an effective supervisory rotation and allow the unit to maintain discipline for longer durations.

In addition to the considerations listed above, you must assume that your attached local national elements are compromised by insurgent intelligence. While the Iraqi soldiers may not be members of an insurgency, they cannot be trusted to have the same understanding of operational security expected of U.S. soldiers. For this reason, you must carefully choose when and how to employ your new combat elements. Framework or steady-state operations are a component of almost every unit in Iraq. Some of these routine tasks can best assess the capability of the Iraqi unit in an environment outside the forward operating base. Checkpoint operations serve as a good example of such tasks. While this type of mission can be high adventure at times, it allows you to take advantage of the cultural understanding of Iraqis in a relatively controlled environment. Checkpoint operations also provide newly assigned soldiers some good basic training while operating in sector.

The desired end state of this on-the-job training is producing capable and confident Iraqi soldiers who can assist your company team in the difficult job of bringing safety and security to Iraq. The benefits of using local national soldiers outweigh the downside. Locals provide a level of cultural understanding that your soldiers will never obtain, they can identify foreigners by accent or other characteristics and are more likely to find contraband hidden in vehicles or dwellings used by insurgent forces. Once you have fixed the training and safety deficiencies of local soldiers, they can be an unbeatable combat multiplier.

As a company team commander in Iraq, you will probably be assigned local national attachments of various training levels. It is your responsibility to develop appropriate mental models, which will allow you to quickly and effectively use indigenous forces in the absence of an established training program. The simple steps listed above assume a directed task to employ relatively untrained local national troops in company-level operations. While not ideal, the current operating environment demands units execute in less than ideal situations. The U.S. Army has found a way to integrate local nationals in every conflict, from U.S. independence to modern day fighting in Iraq and Afghanistan. We must continue to develop simple and effective models that allow us to make use of this potentially massive pool of combat power in the form of local national forces.

"When one treats the people with benevolence, justice, and righteousness, and reposes confidence in them, the army will be united in mind and all will be happy to serve their leaders."

— Sun Tzu

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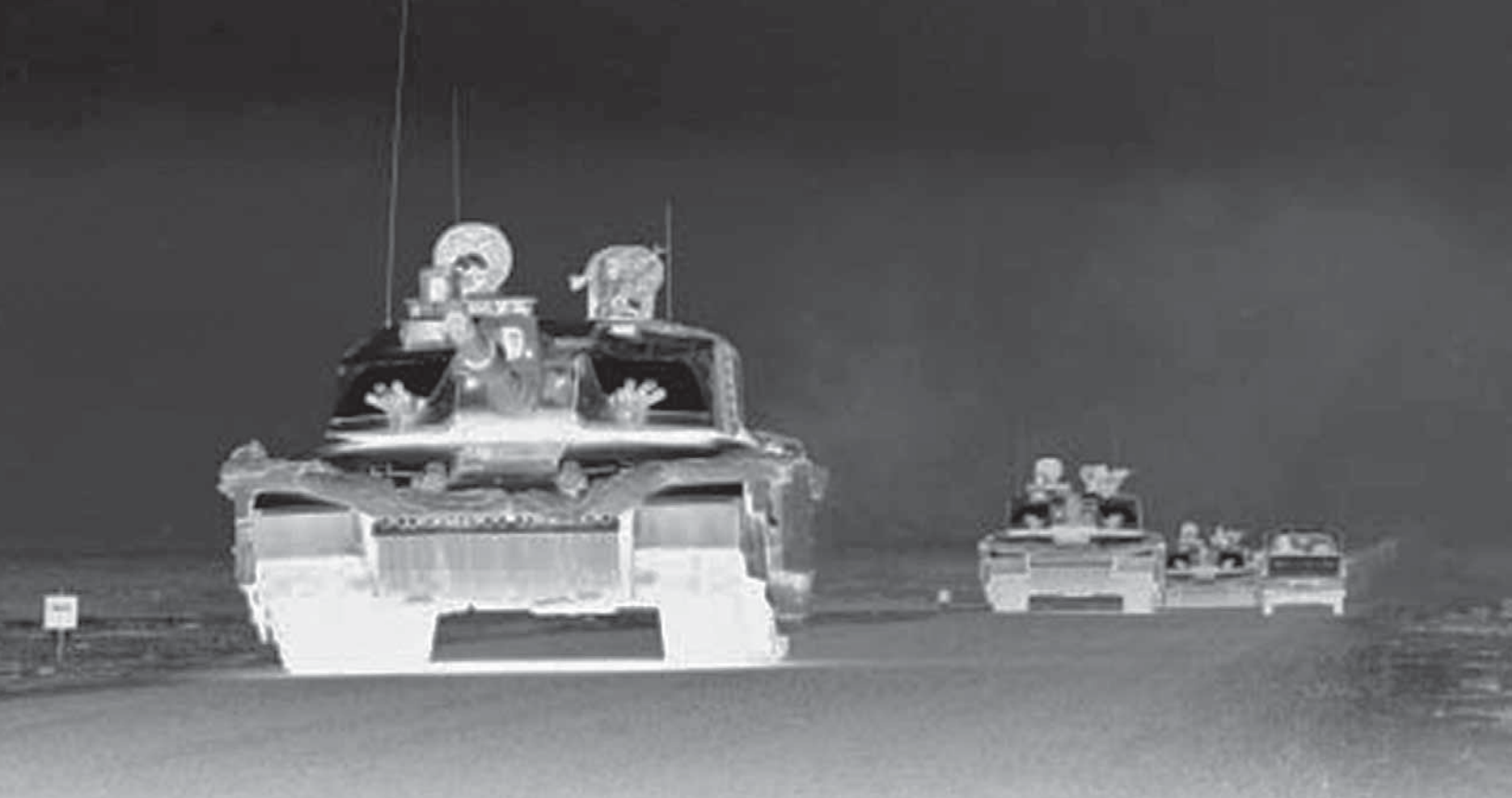
"...the most critical element will always be weapons safety and discipline. No matter what type of training you conduct, the most dangerous weapon a trainer will face, apart from the ever present versions of the improvised explosive devices, is an undisciplined and untrained soldier. If you rehearse nothing else, weapons safety, clearing procedures, and fire discipline are critical with a new Iraqi unit."



Recognition of Combat Vehicles Training Saves Lives

by Dr. William M. Rierson and David A. Ahrens

"Fratricide is the employment of friendly weapons and munitions with the intent to kill the enemy or destroy the equipment, or facilities, which results in unforeseen and unintentional death or injury to friendly personnel."

— U.S. Army Training and Doctrine Command Fratricide Action Plan

The first reported ground fratricide incident during Operation Iraqi Freedom (OIF) occurred shortly after midnight on 25 March 2003, when a British Challenger II tank fired on another near Basra. The tanks were engaging pockets of Iraqi soldiers near a bridge over the Qanat Shat Al Basra canal, which runs along the western edge of the city. In a nearby sector, a troop of Challenger IIs was tracking, through thermal sights, a group of enemy personnel that had been reported by the battle group headquarters. The "target" was reported as an enemy bunker position. The targeted Challenger was unfortunately in turret-down position; its crew working on the turret top was misidentified by the second Challenger crew as the reported "enemy" troops. The tank commander requested clearance to shoot, which was granted. Firing two shots of high-explosive squash head (HESH) at 4,000 yards blew the turret off the Challenger, killing two of the crew and seriously wounding two others. Both tanks were fitted with visual and thermal combat identification panels (CIPs), which were in working order, but the second Challenger crew could not obtain a clear visual view due to the hull-down position of the tank.[1]

This dramatic and costly incident, and several others with similar fratricidal results during OIF, amplifies the continuing need for not only a viable technical solution to combat vehicle identification (CVI) but also the imperative to improve our overall combat identification (CID) training. As of 31 January 2006 in OIF, there were 27 U.S. Army fratricides, 26 from direct fire and one from indirect fire. Two of those incidents were ground-to-air engagements, and one was an air-to-ground strike. Fourteen incidents occurred during daylight hours and 13 at night, resulting in 11 U.S. Army soldiers killed in action and 10 other military fatalities. As these statistics verify, CID is still an unresolved problem on the modern battlefield for the U.S. Army, even during stability and reconstruction operations.[2]

CID is made up of a multitude of facets — situational awareness and target identification within specified rules of engagement are the cornerstones. Individual and collective training is the glue that binds these aspects together. To help prepare our forces to prevent or reduce the potential for fratricide and simultaneously increase combat effectiveness, U.S. Army Training and Doctrine Command (TRADOC) is currently implementing a five-tiered training approach for CID. This training will provide "trigger pullers," a graduated and increasingly robust training program to meet current and projected CID challenges. Regardless of the technology, or the ability of the command and control architecture to provide near-perfect situational awareness, once the vehicle commander or individual shooter reconfirms the target is hostile before firing, the final decision to engage a target by direct fire is, and will always be, relegated to the shooter — the gunner with his finger on the trigger.

The basis and foundation of TRADOC's five-tiered CID training plan is CVI training within a graduated training model as shown in Figure 1. The primary CVI training aid of choice is the recognition of combat vehicles (ROC-V) and training aids, devices, simulators, and simulations (TADSS) with embedded imagery from the ROC-V program. ROC-V is a

thermal sight training program that operates on any computer with the Windows operating system. ROC-V helps soldiers learn to identify the thermal signatures of combat vehicles through the use of an interactive curriculum that teaches the unique patterns and shapes of vehicle "hot-spots" and overall vehicle shapes. ROC-V also provides soldiers with practical experience in the use of individual weapon thermal-sensor image controls. Through the use of virtual sight controls, soldiers learn to effectively adjust their thermal optics to find targets and reveal their thermal identification cues. ROC-V includes training and testing to support the U.S. Army soldier's manual common task (SMCT) skill level 1 for visual vehicle identification.

ROC-V is currently the standard ground CVI training tool within the U.S Army and Marine Corps.[4] Headquarters TRADOC has directed implementation of ROC-V across multiple mission area specialties for both soldier common skills and specialty CVI training. The training program includes paper trainer versions for reference without a computer. The instructor control module permits individual and collective training, testing, and tracking scores. ROC-V is the only training aid available for currently fielded JCIMS devices. ROC-V is available via website download at *https://rocv.army.mil*.

A recent survey of ROC-V users indicates that 79 percent have improved individual CVI skills, and 87 percent rated the ROC-V program as an effective CVI training aid. The survey also provided specific recommendations to improve the program to better meet the needs of the warfighter.[5] Feedback from instructors and graduating students at master gunner schools also indicates user satisfaction with the training program. Many recommendations from these users have been incorporated into the current version of ROC-V.

Representatives from the four armed services are involved in direct consultation with the ROC-V development team to produce the next generation of ROC-V to meet other specific mission area applications. The ROC-V team has already produced a look-down aspect angle version for the air-to-ground mission areas, such as fixed-wing close air support, attack and reconnaissance rotary-wing platforms, and AC-130 gunships. It is currently in use by Marine Corps light attack helicopter squadrons. This same product improvement has potential utility for tactical unmanned aerial system (UAS) sensor analysts.

The Army Training Support Center (ATSC) has assumed responsibility for distribution of compact disc versions of ROC-V through the Joint Visual Information Activity, Tobyhanna, Pennsylvania at *http://dodimagery.afis.osd.mil*. ATSC designed these compact discs as a supplemental distribution method to the web-based, online download method for soldiers who cannot access the website. TRADOC, in partnership with Program Executive Office for Simulation, Training, and Instrumentation (PEO STRI), is working toward embedding ROC-V imagery in combat vehicle tactical trainers and implementing it into TADSS and future combat system trainers. Future efforts also include developing a web-based SCORM conformant course that can be hosted by individual services.

Leaders must ensure they have a plan to reduce the risk of fratricide. Along with improving situational awareness during operations, the key is tough, realistic CVI training before operations. ROC-V meets that training requirement. The ROC-V computer-based training (CBT) is exponentially ahead of traditional training methods. Bottom line — ROC-V training saves lives.

Notes

[1]*Defense Update International Online Defense Magazine*, Year 2004, Issue 2, "Blue-on-Blue Ground Incidents During OIF," online at *http://www.defense-update.com/features/du-2-04/fratricide-2.htm*. Incident also described in UK MOD produced report *Progress in CID* by the Comptroller and Auditor General, HC 936 Session 2005-2006, 3 March 2006, pp. 7 and 20, online at *http://www.nao.org.uk/publications/nao_reports/05-06/0506936.pdf*.

[2]*Countermeasure*, Volume 27, 03/06, Army Combat Readiness Center's Operations Division, online at *https://crc.army.mil/MediaAndPubs/magazines/countermeasure/2006_issues/cmmar06.pdf*.

[3]CID tiered training model developed by TRADOC Capabilities Manager for Platform Battle Command and Combat Identification (TCM PBC/CID).

[4]Army-Marine Corps Board-CID, 27 Aug 04, directed ROC-V image sets be established as the joint standard for CVI training; AMCB principals requested that JFCOM lead an effort to develop and publish joint policy establishing ROC-V as the joint training system/standard for ground platform visual/thermal recognition training. Joint Requirements Oversight Council Memorandum (JROCM) 076-05, OIF Major Combat Operations Lessons Learned — Fratricide, 14 Apr 05, directed DOD to institutionalize ROC-V as a CVI training standard.

[5]ROC-V Online User Survey, 13 March 2005, conducted by USJFCOM/JFIIT.

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Mr. David A. Ahrens is a retired field artillery officer with 28 years active duty service. He continues to serve the U.S. Army as a military analyst working CID issues for TRADOC's Deputy Chief of Staff of Operations and Training located at Fort Monroe, VA.

Tier Level	Type Training
1. Individual	CVI with ROC-V
2. Individual and team	AGTS, BATS, UCOFT, CCTT
3. Team and unit	Gunnery, ranges, NGATS
4. Unit and collective	Force-on-force training exercises with JCIMS at home station and CTCs
5. Collective and joint	Virtual mission rehearsals, combined arms rehearsals, rock drills

AGTS	Advanced Gunner Training Simulator
BATS	Bradley Advanced Training System
CCTT	Close Combat Tactical Trainer
CTC	Combat Training Center
JCIMS	Joint Combat Identification Marking System
NGATS	New Generation Army Targetry System
UCOFT	Unit Conduct of Fire Trainers

Figure 1. TRADOC Combat Identification Tiered Training Model[3]

ARMOR's Writing Guide

Since 1888, *ARMOR* has provided a forum for the open exchange of ideas on mounted warfighting. The publication focuses on concepts, doctrine, and warfighting at the tactical and operational levels of war and supports the education, training, doctrine development, and integration missions of the Armor and Cavalry Forces, and the U.S. Army Armor School at Fort Knox, Kentucky.

ARMOR is printed bimonthly by the Chief of Armor and is devoted to the mounted soldier and the history of mounted warfare. *ARMOR* is distributed to thousands of readers and is widely quoted and reprinted in other publications throughout the world and is a readily available reference at most military and civilian university libraries and research agencies.

Subjects

ARMOR's goal is to stimulate thought, professional growth and development in areas important to the Armor and Cavalry forces. *ARMOR* covers a variety of subjects related to mounted warfighting, to include the tactical, operational, and strategic levels of war; organization and doctrine; logistics; weapons and equipment; foreign military forces; leadership and management; and military history.

Historical articles should draw parallels or illustrate lessons that will be useful today and tomorrow. Articles intended to coincide with an event or anniversary should be submitted at least 6 months before the publication issue. *ARMOR* makes no acceptance decisions until the completed manuscript has been reviewed. The journal seeks articles that will make our readers think, generate discussion, and foster the exchange of ideas.

Style

ARMOR prefers articles using concise and direct language and written in active voice with precision and clarity. The article's theme should flow from specific to general, and its introduction should catch the reader's interest and generally state the main idea. The body should clearly develop the main points, and the ending should conclude logically. We edit all manuscripts to conform to accepted grammatical standards and *ARMOR*'s unique style. However, manuscripts needing substantive changes or documentation are returned to authors for revision. Many manuscripts, especially those written to meet academic requirements, can be improved by eliminating meaningless, obscure, or repetitive words and phrases. Always spell out first references and acronyms and use full names and titles. Remember, our readers do not know the subject material as well as you. Be your own editor, and improve your chances of acceptance. Concentrate on clearly communicating your ideas to the reader.

Graphics

Complex graphics do not translate well to publication. We seldom use full-size graphics and illustrations and when reduced, shading becomes blotchy. Keep graphics as simple as possible. We do accept electronic graphics and photo files in most formats, but prefer high-quality (300 dpi) files in tagged image format (TIF).

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Manuscript submissions should follow these guidelines:

• Send a clean, double-spaced, typewritten manuscript with your name, approximate word length and title at the top of page one.

• Manuscript length for feature articles is 3,000 to 3,500 words, or 15 to 18 typed, double-spaced pages. Article lengths are adjusted based on available space in a given issue. *ARMOR* reserves the right to edit submitted manuscripts.

• Authors are responsible for their manuscript's accuracy and source documentation. Enclose all quoted materials in quotation marks and use endnote citations in the following format:

1. Robert A. Doughty, et al., *Warfare in the Western World: Volume* II, D.C., Heath and Company, Lexington, MA, 1996, p. 913.

2. Ibid., pp. 969-70.

3. CPT Michael R. Evans, "Thinking Outside the Maneuver Box," *ARMOR*, September-October 2002, p. 17.

• Enclose a brief, personal biography including your significant positions or assignments and civilian and military education to establish your knowledge and credibility as a subject-matter expert.

• If you have original photographs, artwork or graphics that will enhance the quality and content of your article, please send them with your manuscript. If you do not have artwork but know where it can be obtained, please advise us.

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Articles should be submitted for specific issues as follows:

Cover Date	Submission Deadline
January-February	15 October
March-April	15 December
May-June	15 February
July-August	15 April
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Budget constraints do not allow *ARMOR* to pay contributors for articles. Authors receive extra copies of the issue in which their article is published. Authors also receive a certificate from the Chief of Armor expressing his appreciation and a free one-year subscription to *ARMOR* from the U.S. Armor Association.

Summing Up

If you are interested in a particular subject, chances are other mounted warriors are as well. Pick a subject, research it thoroughly and think your ideas through. Write naturally and with enthusiasm; do not adopt a writing style foreign to your own way of thinking and speaking. To improve your writing, read good literature. Be your own best critic. Revise and rewrite, but retain wit, animation, and personal touches. Good writing is hard work, but the payback is that it is noticed, and the feeling of accomplishment is as great as in any field.

MACP from Page 23

installations and inspect instructors' level of knowledge.

My first experience with modern army combatives took place during Christmas break of 2004-2005. Our task force in Germany was on a quick-reaction force (QRF) mission and soldiers were only permitted to take local leave or none at all. Our task forces' combatives instructors put on a level I 'leader teach,' where company commanders, executive officers, platoon leaders, and platoon sergeants went through the course together. Remaining noncommissioned officers took care of the soldiers while the rest of us beat the heck out of each other at the gym for two weeks.

On the first day, no one knew what to expect. We went through the basic warm-up and stretching drills, got a little background on the program, and then went right into the fundamentals of ground fighting. We learned and practiced all of the basic jiu-jitsu positions and finished the day with the 'circle of hell.' This was the fun part: everyone partnered up in a big circle, grappled live, or at 100 percent effort, for 3 minutes, then the inner group rotated onto the next opponent. At first, everyone thought we would just rotate a couple times and be done; instead, we rotated through the entire circle for nearly an hour and a half of pain. At this point, our knowledge of combatives did not allow us to know how to 'finish the fight,' only to grapple for a position of advantage. This reinforces the 'position, then submission' fundamental of army combatives.

After the first day, I had no idea how I would make it through the entire course. I could barely drive home because my grip was expended, and once I got home, I could not do anything but lie on the couch and attempt to recover. Over the next two weeks, we went through the entire level I curriculum and were exposed to some level II material. We had a significant attrition rate. By the end, suddenly people had 'stuff to do,' and on the last day, there were about seven people who showed up. My first experience with MACP was outstanding. My instructors were excited about teaching, the students were excited about learning, and even though we limped out everyday, we continued to want to learn more. I found myself looking up new chokes, sweeps, and submissions on the internet over the weeks following the course. The next step was to start teaching the rest of the soldiers.

The task force scheduled the gym one day a week during the morning from 0630 to 0930 hours to begin teaching level I in segments — some soldiers were immediately comfortable with the training, while others were a bit more timid. Once they started with live grappling, everyone gave 100 percent. No one wanted to lose or get tapped out. Eventually, it came time for the punch drill, where soldiers are required to takedown an instructor while wearing boxing gloves.

Once soldiers learned the basic drills, NCOs incorporated the drills into physical training a few days per week to keep soldiers familiar with the techniques. After training my tank platoon, I moved up to the brigade recon troop (BRT) and laid on an entire week of combatives during the mornings, while we deactivated the unit and turned in equipment in the afternoons.

After conducting combatives training with two separate units, I noted that the soldiers from both units responded similarly. First, they are always interested. They enjoy watching the Ultimate Fighting Championship (UFC), so they really enjoy learning the same moves that professional mixed martial arts (MMA) fighters use on television. No one has a problem staying awake during combatives classes. Everyday someone would come in talking about a new move he wanted to try or asking questions about when the unit is going to have a level II class. By the end, without even realizing it, the soldiers had learned more than just combative skills.

After even a few level I sessions, soldiers underwent some beneficial changes. Soldiers who were timid at first became more aggressive and able to turn on their aggressiveness at the right time. The company became more cohesive; platoons would size themselves up against other platoons and would rather watch UFC fights than conduct hip-pocket training. Soldiers who could not finish a two-mile run indirectly got some physical training out of it. Then, of course, is the obvious increase in the platoon's knowledge of hand-to-hand combat lethality — soldiers not only have the ability to engage enemies at long range, but also at close range with punches, kicks, elbows, knees, and chokes if necessary. Best of all, it gets soldiers out of the motor pool and doing something different besides maintenance and gunnery training. Fully trained combative soldiers have the ability to close the distance, gain a dominant position, and finish the fight. They are physically fit, individually capable, team oriented, and thirst for expeditious conflict resolution.

Depending on the post, MACP resources may vary, but generally, every post has someone trained in MACP. Some posts have dedicated trained personnel who do nothing but train soldiers on combatives, while smaller posts may just have a soldier who has been through an instructor level combatives course. Worst case, if your unit currently has no trained personnel, the best idea would be to send someone to USACS at Fort Benning. USACS schedules about 33 level I, 15 level II, 18 level III, and 6 level IV classes annually, and classes are not usually at full capacity. Current Army guidelines require one level I instructor per platoon, one level II instructor per company, one level III instructor per battalion, one level IV instructor per brigade, and two level IV instructors per division/installation.[8]

Ultimately, the MACP is another resource commanders can use to break up monotonous periods of skill-level I training. Everyday, more and more soldiers are exposed to MACP training and are spreading the word. It is interesting, physically demanding, and generally enjoyable for all soldiers from the youngest, newest private to the oldest sergeant major. Commanders should implement a combatives training plan at the earliest time to reap the benefits prior to deployment. Soldiers will be better prepared to handle hand-to-hand combat and progressive escalation of force in stressful situations on foreign lands.

Notes

[1]U.S. Army Regulation (AR) 350-1, *Army Training and Leader Development*, U.S. Government Printing Office (GPO), Washington D.C., 13 January 2006.

[2]United States Combative Arts Association Homepage, available online at *http://www.moderncombatives.org.*

[3]FM 3-25.150, *Combatives*, GPO, Washington, D.C., 18 January 2002.

[4]U.S. Army Infantry Homepage, available online *https://www.infantry.army.mil/combatives/content/purpose.htm.*

[5]Ibid.

[6]Ibid.

[7]Ibid.

[8]Modern Army Combatives Program Concept Plan as of 12 October 2005, available online from *https://www.infantry.army.mil/combatives.*

Captain Brian W. Loyd is the commander, B Troop, 5th Squadron, 15th Cavalry, Fort Knox, KY. He received a B.S. from the U.S. Military Academy. His military education includes Armor Captains Career Course, Armor Officers Basic Course, and Ranger School. He has served in various command and staff positions, to include XO, Brigade Recon Troop, 3d Brigade, 1st Infantry Division, Vilseck, Germany; and platoon leader, 1st Platoon, A Company, 1st Battalion, 63d Armor, 3d Brigade, 1st Infantry Division, Vilseck.

sound, training methodology. All of Mr. Graham's points about the difference between ROE and RUF, while technically correct, miss the mark. Because, other than in conflicts where America's national leadership has designated a "hostile" force to be targeted at will, soldiers, sailors, airmen and Marines will *always* be responding to a hostile act or demonstrated hostile intent (much as police officers do on a daily basis in the United States). Accordingly, it is extremely important that our servicemembers are educated on threat identification. It simply does not make sense to ignore the decades of law enforcement experience in this area of both law and tactics.

Individuals who have never personally attended the Seminar, never practiced operational law in a deployed setting, and who have never been a tactical end-user of ROE/RUF guidance should reserve judgment on the Seminar. To a person, operators, and commanders that have attended this Seminar (from E-1 to O-8) "get it" and see its value and need. The only resistance this cutting-edge training receives is from a small group of Army Judge Advocates, primarily ones from the Schoolhouse, that seem threatened by a methodology that outstrips their skill sets.

DAVID G. BOLGIANO
LtCol, U.S. Air Force

Balancing the "Big 12"

Dear *ARMOR*,

As one of the original guinea-pig participants in the drill that developed the list of 29 leader behaviors that identify "good leaders," I read with interest LTC Philip Allum's concerned letter in the March-April 2006 issue, as well as LTG Ulmer's thoughtful response in the May-June issue. Since our Army is fighting a war with no foreseeable end, LTC Allum's reaction to the list is wholly understandable. The warrior ethic and combat leadership challenges are inevitably in the forefront of all soldiers' thoughts and concerns.

A little balanced consideration, however, clearly reveals the vital fact that throughout our Army's history, the vast majority of time spent on leadership challenges during an officer's career has involved being trained and training the next generation of young officers and noncommissioned officers to be successful leaders. There is no question that tactical competence, intelligence, and courage are critical to successful leadership in combat, but they are expected of all who aspire to leadership, though not always present. They are difficult to assess, except on the battlefield, and they are not discriminators in the long-term training environment. There, the emphasis should be, although unfortunately often honored more in word than practice, on fostering a supportive learning environment that develops confidence, competence, a willingness to take risk, and a trust in the chain of command.

Because of the nature of operations in Iraq and Afghanistan, commanders and leaders at company level and below are making critical decisions daily and operating without a structured environment. They will expect, or hope for, the same level of responsibility when they return home. Will they find it, or will they be faced with a chain of command focused on error-free performance, the next promotion, and the boss's priorities?

I was surprised to read LTC Allum's defense of micromanagement. The cross of centralized control has been borne by the Army, with rare exceptions and only for limited periods, since World War II, when it was required to expand from less than 200,000 to over 8,000,000. According to LTG Garrison H. Davidson, writing in *Army Information Digest* in December 1961, that centralized control had not yet been corrected and many of us would say it still remains today under the name of "micromanagement." As LTC Allum would agree, identification of the most promising future leaders is our goal today, but success in that endeavor is far more likely to be achieved by raising aspirants in a decentralized environment that encourages initiative, permits mistakes, protects the maverick, and develops confidence. The "Big 12" was designed to identify officers whose records show that they have built and will continue to build that necessary learning environment. If the supporting systems (OER, command, schooling, and promotion selections) pay heed to the "Big 12," success in combat will follow as surely as the night follows the day.

JOHN C. FAITH
MG, U.S. Army, Retired

TUSK Right on Target!

Dear *ARMOR*,

I read with extreme delight and awe the article, "Abrams and the Need for TUSK in the Age of Rapid Urbanization," so well written by LTC Benjamin Harris, in the May-June 2006 issue of *ARMOR*. I read a similar article the evening before in the *Marine Corps Times*. I was moved that the U.S. Marine Corps "brass" actually listened to its tank crewmen and are willing to spend their very meager and extremely precious military budget on upgrading these already awesome weapons platforms.

When I was a Marine tank commander in Vietnam, we seldom employed the .50-caliber machine gun because it was so poorly mounted (sideways) inside of the tank commander's cupola. Plus our tank's loaders did not have an organic weapon — other than a .45-caliber pistol or possibly a "found" weapon that some hapless (and wounded) grunt had left on our vehicle.

JOHN WEAR
SGT, USMC, Retired

Mechanized Cavalry Group Was an Effective Mobile Combined Arms Unit

Dear *ARMOR*,

I read with great interest the very fine article on World War II mechanized cavalry, "The Armored Reconnaissance Squadron and the Mechanized Cavalry Group," written by Captain William S. Nance in the January-February 2006 issue.

During those days, I was a rifleman, first scout of a rifle squad in the 94th Infantry Division. We were attacking the pillboxes of the Siegfried Switch Line and defending ourselves the best we could against the counterattacking 11th Panzer Division. In one attack, I saw 300 men go out into the attack at 0600 hours; they were counterattacked by two Panzers. After a day of firing, I saw 30 of them come back. One Panzer had been hit by 14 bazooka rounds, the other by 19 bazooka rounds. All the bazooka rounds were ineffective, in part because they had to hit exactly square to even explode. The rounds that exploded did so on the bazooka skirts of those Panzers, so no damage was done from any of those hits.

Our infantry units were woefully short on riflemen, because our Nation was literally out of men. Our intended 12-man rifle squad normally operated with just 5 men. Our intended 40-man rifle platoon had just 19 men. After one attack, our company was the relief company for one of the successful attacking companies. I took over the foxhole of that company commander. He told me he had a "foxhole strength of 24 men," 24 men in his entire company. Since his were the only men left on the battlefield that day, we "won" that battle.

The author writes, "However, the question still remains as to why he put his weakest regimental formation (The 14th Mechanized Cavalry Group, equipped with 37mm M8 armored cars and 37mm M5 light tanks) along the most likely avenue of approach in his sector."

The armor on those vehicles, light as it was, was far better than the protection our cotton field jackets gave us infantrymen. Also the 37mm gun, as small as it may have been, was far more devastating that the 30-06 caliber rifles we infantrymen had. We had no weapon in any of the units in our ground forces that could reliably stop a German Panzer. Only fire from our fighter aircraft could reliably knock out a Panzer.

In the Battle of the Bulge, nobody "stopped" the Panzers, they merely and literally, "ran out of gas." To eliminate traffic jams, we put our supply depots off on a side road away from the main roads. The German Panzers had gone by one such depot that had about 1,000,000 gallons of gasoline stockpiled in it. Had one little German recon unit investigated the side roads, the German Panzers could have been refueled and would have easily gotten all the way to Antwerp before the skies had cleared and our airplanes could fly again. Had they found that fuel supply, it would have been a different war.

Captain Nance is correct, a WWII mechanized cavalry unit was pathetic when it came to stopping a Panzer attack. But, pathetic or not, a regimental-sized mechanized cavalry unit had far, far more fighting power than a WWII infantry regiment.

To this one-time "ground-pounder," screening seems to be a normal employment for cavalry. In the case of the Ardennes, the 14th Mechanized Cavalry might have used their mobility to get out of the way and let the (road-bound) German Panzers go on down the road unopposed. They then could have used their mobility and superior (superior to infantry) firepower to take out all the support troops behind the Panzers. It was a tough war and tough decisions are always difficult to make. A mechanized cavalry group was a very, very effective mobile combined arms (armor, infantry, and artillery) unit. The Panzers outgunned them, but the Panzers also outgunned everything else we had in Europe. Captain Nance's article is outstanding.

ROBERT P. KINGSBURY
LTC, U.S. Army, Retired

REVIEWS

Blink: The Power of Thinking Without Thinking by Malcolm Gladwell, Little, Brown, and Company, 2005, New York, 277 pp., $25.95 (hardcover)

Malcolm Gladwell is a writer for *The New Yorker* and former science reporter for the *Washington Post*. *Blink* is a very readable and informative book on rapid cognition, which is the process of unconscious thought and decisionmaking. In fact, the subtitle of the book, *The Power of Thinking Without Thinking*, is actually more descriptive of the content. The author presents no new scientific ideas; rather, he explains many existing thoughts and theories on unconscious decisionmaking through a mixture of real-life examples and interviews with psychologists.

The principle thesis throughout the book is that our unconscious minds have the ability to process information and allow us to make decisions in ways we are not aware of, a process he calls "thin slicing." He also demonstrates how we can refine this ability through practice. To make his point, he uses a wide variety of examples of rapid cognition. This variety also leads to the main weakness of this book, in that his examples do not seem to clearly support any one thesis. In fact, his conclusions from some examples seem to be contradictory.

Despite these shortfalls, this book has great applicability to the professional soldier. I will caveat that recommendation with the fact that I have neither the education nor the experience to dispute the science he presents. A layman, at best, in the field of psychology, I had to accept the author's thoughts on the many theories presented.

I found two examples especially relevant. First, he writes about how life experiences effect our preconceptions about other people. His specific examples on this topic are racial and sexual stereotyping, but you can apply the ideas to any situation. One application particular to the military that came to mind is our ideas on personal appearance. We, in the military, seem to have a natural bias toward those who appear physically fit. However, we all remember people who did not project the prototypical soldier image, yet were very competent soldiers. Do you remember your first impression of this soldier; did you doubt his or her abilities? The author would say that this unconscious inclination has far greater effect on our perceptions of this individual than we might imagine.

In his final chapter, Gladwell makes what I feel is his most relevant example for soldiers. He analyzes the incident of the white police officers in New York who shot an unarmed black man who they mistakenly believed had a gun. Using this incident as a case study, Gladwell demonstrates the manner in which we respond to various types of stresses and fears and how we make life and death decisions under those conditions. In short, he reiterates the adage that "in times of stress, you go with what you know." He offers a spectrum of reaction related to our distance in time and space from sources of stress. He also cites the work of David Grossman in *On Killing*, a book with which many military professionals are already familiar.

This book is a great primer for those who want to conduct deeper research into the science of decisionmaking. I recommend this book to all who want to gain a better understanding of how we make decisions and how to train to make more decisions more effectively. As I said earlier, the chapter of the police shooting has a special relevance to us in the military who find ourselves in a counterinsurgency environment where the effects of a wrong lethal force decision can have huge ramifications. The strength of this book for the military professional is that Gladwell helps break down Ph.D.-level science into a high school-level discussion. I would also recommend you read this book along with Grossman's *On Killing*. Both help us understand the very complicated business of how we react in life-and-death situations, and both help show us how to do it better.

SHON McCORMICK
MAJ, U.S. Army

Military Misfortunes: The Anatomy of Failure in War by Eliot A. Cohen and John Gooch, New York Free Press, 2006, 320 pp., $15.00 (paperback) re-release

When I deployed to Kuwait prior to the opening stage of Iraqi Freedom, I took five books along, one of which was Eliot Cohen and John Gooch's book. I first read this book during my time at the School of Advanced Military Studies (SAMS) in 1991/92. I wanted to remind myself, as we developed our plans for the land component, of the words at the end of the book, "The causes of military misfortune are complex… The problem of command is not universal but particular, and it is defined by the nature of each military organization and the unique strategic, operational, and tactical challenges it faces." Whether or not we will be successful at avoiding military misfortune remains to be seen, but it will not be from a lack of effort. Effort is one thing, as Clausewitz reminds us that the use of force in war in no way precludes the use of intellect. I think this re-release is quite timely.

At a recent conference I had the privilege of speaking with Dr. Cohen about his book. He told me the only new portion of the book is the afterword, which is as worthy as the entire book. The conclusion of the afterword is rather damning, Cohen asserts that we, the military, set ourselves up for misfortune by misreading the lessons of history and believing that, "victory came through a tightly controlled, massive application of force in pursuit of simple and limited objectives." In doing so, we only read the history we want to, thereby putting aside the lessons of Vietnam and other counterinsurgency efforts.

While I agree that in the late 1970s and 1980s, our Army, as well as the rest of the defense establishment, might have specifically set aside experiences in Vietnam and insurgencies in general, we must also remember that our leaders then faced very tough decisions. They had to not get it too badly wrong, as we all paraphrase Sir Michael Howard. We had to rebuild an Army. Our leaders had to answer General Abrams' question, "Why an Army?" We faced drugs in the barracks, no established way to get drug abusers out of the Army, the remnants of McNamara's 100,000, lousy equipment, and even lousier morale. There was no NTC, no MILES, no BCTP, no funding for the education system we now take for granted. While it is chic in the moment of today to denigrate the decision to "throw out" counterinsurgency, it is appropriate that we remember where we were as an Army back then. The struggle at the time was for the Army's soul.

That was then; this is now. And because we live in the here and now, there is some urgency about reading and heeding the lessons from *Military Misfortunes*. Our Quadrennial Defense Review has enshrined the title "The Long War." As we face this challenge, it is more important than ever to bear in mind Cohen's rejoinder to read history accurately, not comfortably.

History allows us to know what decisions were made and the conditions at the time of decision. Through an accurate reading of history, we see the second- and third-order effects as decisions are translated into action and action unfolds, meeting friction and a thinking foe that always gets a vote. Our Chief of Staff has told us we train for certainty and educate for uncertainty. The responsibility for education is a personal and professional responsibility. Indeed, in our profession, one could say continuing personal dedication to education is a moral imperative.

I remind the officers in SAMS that no matter how well they develop the plan and the order that translates the plan into action, Soldiers, Marines, Airmen, and Sailors will die in execution. It is a hard fact in the calculus of war. The urgency now is to be damned sure we don't get it too badly wrong in our assessments — advice to policymakers and commanders. A study of this book and others will help find the path toward adaptive plans and orders. This is not a gratuitous cheap shot re-release, it is a sobering reminder that our responsibility is to constantly evaluate and think. Cohen and Gooch point out that the misfortunes of the past were not sins of commission. Situational awareness includes an imperative for historical awareness. Read this book and take it with you to theater — I did.

KEVIN C.M. BENSON
COL, U.S. Army

ARVN: Life and Death in the South Vietnamese Army by Robert K. Brigham, University Press of Kansas, 2006, 178 pp., $29.95 (hardcover)

Robert K. Brigham has written an interesting and topical history of a failed institution — the South Vietnamese Army. As we struggle to help create a new army in Iraq today, we can find in Brigham's narrative a host of insights

and lessons that could have direct application in Southwest Asia. I recommend it unreservedly to today's armor officer of any grade.

As the book jacket rightly points out, the Army of the Republic of Vietnam (ARVN) became an object of scorn from its allies and enemies alike. Some might argue that ARVN's bad reputation was exaggerated, but despite strong numbers and good equipment, it collapsed swiftly in 1975 — this book explains why. Brigham's work is not a history of the battles of the ARVN, although it gives an excellent account of the 1964 Battle of Ap Bac, but it is rather a study of that force as an institution. It focuses on how the army was conscripted, indoctrinated, trained, and sustained. It compares ARVN practices with those of its enemies, the People's Liberation Armed Forces (the Viet Cong) and the Peoples Army of Vietnam (the regular North Vietnamese Army). The comparison reveals convincingly why the south lost.

In Brigham's view, it was, paradoxically, the communist armies' expounding modern "Marxist" theories that managed to create military institutions that reflected the traditional mores of Vietnamese village culture. That culture stressed familial obligations; and through intense ideological training, the communists convinced their soldiers to extend those traditional obligations to party and state. In contradistinction, the ARVN turned its back on the Vietnamese past. Beyond telling its soldiers they needed to fight communism, the ARVN paid little attention to ideological indoctrination and pursued conscription policies that paid no attention to the economic and familial needs of the village. In short, communist soldiers could understand what they were fighting for, and the ARVN only knew what they were fighting against.

Compounding this critical moral issue, ARVN induction practices were terrible, and its training haphazard at best. Personnel management systems were hugely inefficient, and U.S. advisors could never convince their ARVN counterparts to take basic training seriously. Only the poorest officers and NCOs served in the training base. Hence, even a motivated South Vietnamese recruit would soon become disillusioned with the army's effectiveness. Worse, he would not be confident in his training as he approached battle. It was not difficult for the ARVN to develop an inferiority complex.

Further, ARVN pay was always very poor. And perhaps surprisingly for an army operating under U.S. tutelage, the ARVN was ill fed as well. Stories abound of families, having lost a bread winner, being forced to try to supplement their soldiers' meager rations.

In fact, one wonders while reading this book why the ARVN fought at all; and herein lies the book's weakness. It is clear that many ARVN units fought hard, and ARVN certainly suffered huge casualties. Brigham acknowledges this, but has difficulty explaining why. He tries to attribute some ARVN battlefield bravery to the fact that the ARVN soldiers saw the army as the only choice — albeit a poor one — because they had to protect their families in dangerous times. This is an interesting theory, but impossible to prove.

Additionally, Brigham tends to idealize the communist armies' practices. I rather doubt that they were as good as he makes them out to be. I should mention, however, that Brigham does not appear to glorify the communists or profess support for their cause. One of the great strengths of this work is that it avoids the political bias so evident in many works concerning the Vietnam War. Brigham tells it as straight as he can — this book serves as a great case study in how *not* to build an army, an extremely valuable today.

WILLIAM R. BETSON
COL, U.S. Army, Retired

Blueprint for Action: A Future Worth Creating by Thomas P.M. Barnett, Putnam, New York, 2005, 448 pp., $27.95 (hardcover)

Described as "one of the most important strategic thinkers of our time," Thomas Barnett, a strategic planner who has written for *Esquire*, *Wired*, and the *Washington Post*, has taught and advised military and civilian leaders in the Office of the Secretary of Defense (OSD), the Joint Staff, Central Command, Special Operations Command, and Joint Forces Command. His work at the U.S. Naval War College and the Office of Force Transformation in OSD, under the tutelage of Vice Admiral Arthur Cebrowski, focused on strategic concepts that link change in global security environments to U.S. military transformation; hence, his strategic vision, *Pentagon's New Map*, went to print. To follow his seminal work, Professor Barnett seeks to implement his strategic vision in volume two, *Blueprint for Action: A Future Worth Creating.*

Before getting to the arguments, Professor Barnett's tone needs to be addressed. He bounces between a plain-spoken "from my rear view mirror" to that of the detached hallways of the "ivory towers." He rapidly shifts between mass-market media appeal and academic credentialing. It is an obvious battle to gain the trust of separate audiences.

He begins by examining the debate between his largest group of critics, air-power advocates of "network-centric warfare" and the advocates of grunt-centric "fourth-generation warfare," and his blueprint's need to maintain *both* a war-winning Leviathan force and a nation-building SysAdmin force. To look back on volume one, the Leviathan force is plainly the "shock-and-awe" regime toppling forces of OEF and OIF; the SysAdmin forces are post-conflict stabilization and reconstruction-focused stability and support operators, to include low-intensity conflict and small-scale crisis response (what remains in Afghanistan and Iraq).

The end result of this debate for Barnett is the necessity for both paradigms to support his two force sets to wage war and sustain peace. He argues that America will continually engage in post-conflict stabilization. To continue — what in the mid-1990s Marine General (Retired) Anthony Zinni predicted — more and more operations other than war. On this premise, he argues for a "department of global security" or of "everything else" to lead his SysAdmin force to a unifying effort countering the friction created by globalization's expansion. The roadblocks to implementation are first, the American defense-industrial base and its political stranglehold over Congress. The second roadblock is a resistant army fearing loss of its warfighting ethos. Personally, I still labor over his claim that a large multinational SysAdmin force operating in OIF post-dominate phase would have prevented the post-liberation chaos and stymied any insurgency. My own experience in Iraq makes me lean toward confirming it.

In a chapter dedicated to proving the "functioning core" (the parts of the world whose economies are integrated into the global economy and adhere to globalism's security rule set) is capable of overcoming social, economic, and political friction generated by the advance of globalism, Barnett takes aim at critics in the "futurist" genre. Maybe its a hit on my ego, but summarizing Lieutenant Colonel (Retired) Ralph Peters and Robert Kaplan as "Orwell aspirants" that make "frightening extrapolations that narrow the mind" is bizarre. Personally, as an avid reader, I place Peter's assessments in the context that as a (former) military intelligence officer, he is tasked to predict most dangerous courses of action. These courses of action regularly spill over into his writings. Plus, Peters and Kaplan are two of few writers/journalists with the courage to venture outside the safety of Baghdad's "Green Zone."

Further in the chapter, he expounds a bit on the current fad in international relations literature focused on "resource wars." I won't argue the contrary to his critique that money and legalities will circumvent fights over raw material (water, forests, oil). However, I would refresh his memory that the casus belli for Desert Storm was a claim to oil rights. I would suggest that those writers are holdovers still hoping to fill the 1990's foreign policy void, but will not cast their lot in resolving the challenges of the Global War on Terror.

What about security policy vis-à-vis our growing global competitor China? He advises that America spend all its time not with the bankrupt old colonial powers of Europe, but with that of China, India, Russia, and Brazil. No argument here; sounds like an argument our friend Peters has made.

Professor Barnett believes his vision is forward of his time. He claims that the generation of "echo boomers" (Americans born 1980-1995) will be the cohort in 2025 to employ his blueprint. This may be truer than he thinks. The echo boomers constitute the bulk of the young company-grade officers and junior NCOs that are the battle-hardened "strategic corporals" of OEF, OIF, and the GWOT. For the echo boomers to succeed, he offers an array of character descriptions of the "host of heroes," which we will encounter as his strategic vision is carried out. Professor Barnett, I will keep my eye open for them.

JOHN DeROSA

Patton Museum Volunteers Restore the "Ontos"

"Ontos" is a Greek word, which translated to English means "the thing." The Ontos has a Chrysler six- or eight-cylinder engine, an Allis Chalmers automatic transmission, a cruising range of approximately 125 miles, and with one inch of armor, it weighs nine tons. Its armament consists of six 106mm recoilless rifles with four .50-caliber ranging machine guns, and a .30-caliber light machine gun. Its effective range is 1,200 yards. The Ontos loads five different rounds, which include the HE, HEAT, HEP-T, WP, and Beehive with a stowed capacity of 18 rounds. It is light and thin, making it strictly a hit-and-run vehicle. The Ontos' crew is made up of a driver, loader, and gunner or an Ontos commander.

History

Developed for the U.S. Army in 1955 to combat Warsaw Pact tanks during the Cold War, the Ontos was rejected because of its external loading system. In 1957, the U.S. Marines adopted the Ontos and replaced the 75mm recoilless rifle. The Ontos made its first appearance at Camp Lejeune, North Carolina, in the spring of 1957. On 16 July 1958, President Eisenhower ordered the 3d Battalion, 6th Marines, 2d Marine Division to Beirut Lebanon with a platoon of Ontos. Following Beirut, the Ontos went to combat in the Dominican Republic and South Vietnam and was retired in late 1969.

Volunteer and Restoration

On 10 November 1971, on the Marine Corps' birthday, Lieutenant Colonel M.F. Manning, USMC, presented the Ontos to the Patton Museum at Fort Knox on behalf of the Commandant of the Marine Corps.

The Patton Museum has a generous and reputable volunteer program. On the first Saturday of each month and the third Saturday and Sunday of each month, volunteers come to restore vehicles dating back to World War I. Many volunteers serve as guides during the week at the museum, as well as the motor pool, where vehicles are repaired and restored. Many of these volunteers simply love being around all these historic vehicles, which is reward enough for them.

The Ontos sat on a concrete pad outside the Patton Museum from 1971 until 2001, when a soldier, Sergeant First Class Don Moriarty, pushed for restoration of the pile of rust. Many laughed at the idea — the Ontos was rusted and welded shut with no spare parts.

A Slow Beginning

Two years ago, Steven Slaughter, an Ontos veteran from Vietnam, and Robert Shofner, an Ontos veteran from Beirut, Lebanon, joined in with other volunteers and began the restoration process, which was primarily funded by donations from the now retired Don Moriarty. After lots of engine repair, sandblasting, freeing up and cleaning of the guns, painting, welding, electrical work, and thousands of volunteer hours, the rusty old relic was transformed into a thing of beauty and preserved for future generations.

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