Infantry

Building Teams and Strengthening Soldier Resilience

Infantry

FRONT COVER:

Soldiers assigned to the Security Force Platoon, Georgia Agribusiness Development Team, provide security along an embankment in Logar Province, Afghanistan, on 17 November 2011. (Photo by SPC Austin Berner)

BACK COVER:

Soldiers with the 4th Brigade Combat Team, 4th Infantry Division, head out to catch their flight out of Forward Operating Base Pacemaker on 25 December 2011. (Photo by SGT Ruth Pagan)

This medium is approved for official dissemination of material designed to keep individuals within the Army knowledgeable of current and emerging developments within their areas of expertise for the purpose of enhancing their professional development.

Commandant's Note

COL WALTER E. PIATT

THE COHESIVE INFANTRY TEAM
THE HUMAN DIMENSION AT WORK

The Infantry squad remains the foundation of the decisive force and is the cornerstone of success on today's battlefield. In this Commandant's Note I want to address what goes into building cohesive Infantry teams and offer thoughts on the role the human dimension plays in how we train and care for our Soldiers and Families.

Whether the Infantry squad operates on urban terrain, in the sparsely settled countryside or above the timberline, victory will ultimately belong to those formations best trained to operate in today's environment of asymmetrical warfare and against a resourceful and determined enemy. Building Infantry teams solidifies units, empowers subordinates, and fosters the resiliency that is so essential to Soldiers in combat. What matters is the Infantry squad members' ability to identify a threat and react to neutralize that threat while accomplishing the mission before them. Each member of the squad functions in concert with his teammates and they succeed because they are a cohesive team whose members have trained together, bonded through shared adversity and success, and have developed the resiliency to face future challenges.

We know that the elements that team building comprises are both concrete and abstract. While we can easily quantify and evaluate the concrete factors, the abstract can be more elusive, but are certainly no less important. Marksmanship, physical conditioning, height/weight standards, endurance, and other proficiency levels readily lend themselves to determination by the standardized testing tools which the Army has used successfully for decades. However, assessment of attributes such as resiliency — the ability to bounce back from physical or psychological adversity — can be more elusive due to their abstract nature, and the Army's Comprehensive Soldier Fitness initiative comprises resiliency training as an integral part of its program and goals. This training will eventually be offered to Army Family members as well. A key element of unit cohesion is the shared commitment — itself difficult to quantify — which enables Soldiers to achieve the unit's shared goal through collective effort. Team building will result in a sense of team identity based in part on a shared vision and confidence in the skills, integrity, reliability, and commitment of their teammates.

Deployed Soldiers face the challenges of turbulence, uncertainty, comparatively short dwell times — the time a Soldier spends at home between deployments — and the demanding pace of today's operations tempo, and this is why the human dimension of the force demands our attention. The human dimension has cultural, societal, political, and environmental implications. It is as relevant to the Soldier's off-duty life as it is to what he does at work, and includes the well-being of his family and their and his moral, ethical, and spiritual needs. We recall G.K. Chesterton's observation that "The true soldier fights not because he hates what is in front of him, but because he loves what is behind him." The Infantry squad is a team in the best sense of the word, whose members' cohesion, resiliency, and commitment to one another and the mission generate a group dynamic that is not easily shaken.

As we set about training our Soldiers to meet today's challenges and those that yet lie over the horizon, we need to remember the effects and benefits of the human dimension on the development and sustainment of the tough, cohesive team that is the Infantry squad. We owe today's Infantryman nothing less. Follow me! One force, one fight!

Photo by SPC Kristina Truluck

A U.S. Army Soldier assigned to the 2nd Infantry Division's 5th Battalion, 20th Infantry Regiment provides security outside Mullayan in Afghanistan's Kandahar Province on 26 December 2011.

New Light Machine Gun Aims to 'SAW' Soldiers' Load

ERIC KOWAL

Nearly 20 Soldiers participated in a two-week assessment of a prototype light machine gun (LMG) in October to demonstrate its potential impact on mission effectiveness and to help engineers develop possible improvements to the weapon and its unique ammunition.

The evaluation sought the warfighter's perspective after enduring a series of strenuous combat performance drills with the weapon. It took six years to get from a concept to a fully functioning weapon that was ready for evaluation, but Kori Phillips, a project management engineer in the Joint Service Small Arms Program (JSSAP), said it was well worth the wait.

"This is exactly what we have been waiting for," said Phillips. "This is what we need to move forward."

The Soldiers' feedback will be used to influence the user community to develop a Capability Development Document (CDD). A CDD is required before the system can transition to a program of record and enter the engineering and manufacturing development phase of the acquisition life cycle.

This would be the next step needed for the program to move forward toward an eventual fielding of the weapon to Soldiers in the field.

The light machine gun is part of the Lightweight Small Arms Technologies (LSAT) program, which is managed by the JSSAP, part of the Army's Armament Research, Development and Engineering Center (ARDEC) at Picatinny Arsenal, N.J.

The LMG is a gas-operated, cased telescoped light machine gun that fires the standard 5.56 x 45mm NATO round used in the M249 Squad Automatic Weapon (SAW) and M4 rifle. It is air-cooled and belt fed with selectable semi-automatic and fully automatic fire and fires from the open-bolt position. Its rate of fire is approximately 650 rounds per minute.

The JSSAP team hopes that the LMG will eventually replace the SAW as the standard issue machine gun used by Soldiers in combat zones.

Getting to Know the Weapon

The machine guns and their operators were tested through automatic rifleman tasks and operational scenarios.

The purpose was to assess how the lighter machine gun affects the Soldiers' ability to effectively engage targets from various firing positions after completing tasks that induced physical stress and an elevated heart rate.

The weapons were also evaluated on their suitability regarding portability, safety, compatibility with Soldier equipment, durability in challenging environments, ease of use, and impact on Soldier mobility.

"We ran Soldiers through with both weapon systems and timed them to look at how much faster they could complete the course with the lighter weapon and to gain subjective feedback on mobility and portability issues while they negotiated the obstacles," said MAJ Matthew Bowler, a military advisor to the small arms program.

Immediately after each event, the Soldiers filled out surveys where they offered opinions about how they felt

Photos by Eric Kowal

A Soldier engages a close-range target with the light machine gun during a military unit assessment at Fort Benning, Ga., in October 2011. The evaluation sought the warfighter's perspective after enduring a series of strenuous combat performance drills with the weapon.

physically and any issues or malfunctions they experienced with either weapon or its ammunition. They could also include any positive feedback.

On the first day of the second week, the Soldiers marched six miles in full combat gear, including body armor, a 50-pound rucksack, and a basic load of ammunition for their respective weapons. Half the Soldiers carried the SAW and the other half carried the LMG.

After the road march, the Soldiers immediately started firing their weapons to measure the effects of muscle fatigue and stress while firing.

SGT Brandon Vega, an Infantryman with the 2nd Battalion, 29th Infantry Regiment, saw an increase in his accuracy when firing the LSAT after the march compared to the SAW.

"The first six-round bursts were within the size of a quarter," Vega said. "Then I got three on top of one so I was real impressed with that." Vega added that he has yet to achieve the same level of accuracy using the SAW.

According to a study conducted in 2005, the average fighting load for the SAW gunner is 79 pounds. That is nearly twice the weight a Soldier should carry, according to Army doctrine.

"The Soldier carries too much weight so anything we can do to reduce Soldier load increases the Soldier's effectiveness, his capability on the battlefield, and his survivability," said Bowler.

The weight reduction provided by the LMG would have a significant effect on the SAW gunner, the most heavily burdened Soldier in the squad.

With a basic load of 1,000 rounds, the LMG and its cased telescoped ammunition is 20.4 pounds lighter than a traditional SAW with the same amount of standard, brass-cased ammunition.

During the assessment, more than 25,000 rounds were fired from eight prototype LMGs.

The suggested rate of fire for machine guns is three- to five-round bursts whenever possible, eight- to 10-round bursts at the most. This gives the gunner time to readjust his aim and helps keep the barrel from overheating as quickly.

A high rate of fire increases the possibility of a "cook off." A cook off occurs when the propellant is unintentionally ignited by the heat in the weapon chamber, firing a round unexpectedly and causing a significant safety hazard.

Because of the design of the chamber, the LMG is very unlikely to experience a cook off, Phillips said. Technical tests showed that more than 250 rounds could be fired without a risk of cook off. The M249 SAW has been known to cook off at 220 rounds under certain circumstances.

Other Assessments

In another assessment of shooting while under physical stress, Soldiers wore body armor and sprinted 200 yards with their weapons and a basic load of ammunition, then rapidly engaged close-range targets from the standing position. Again, they performed this task with both weapons. Many Soldiers saw an improvement in their overall time with the lighter weapon.

"Today we ran with the LSAT and with the SAW," said CPL Nickolaus Hammack, one of the military police Soldiers participating in the assessment. "Both were pretty trying, but the SAW hands down is way heavier. Especially going up a hill, you

A Soldier exits through a window during an assessment of military operations in urban terrain at Fort Benning.

feel the weight on you. (The) LSAT is a lot lighter weapon. It really is a joy to have."

A third week of assessment involved Soldiers of the 75th Ranger Regiment. They used two of the LMGs as part of a squad maneuver live-fire exercise to determine how the attributes of the new weapon system would impact squad effectiveness.

The exercise was conducted in an urban setting where the Soldiers used the weapon for suppressive fire and for room-clearing.

The Rangers said they liked the semi-auto feature that made the LMG a much more viable weapon for room-clearing than the SAW.

Future of the LMG

Overall, the Soldiers' comments were positive, and they overwhelmingly preferred the LMG to the SAW. They were impressed by the weapon's light weight, decreased recoil, and related increase in accuracy and better control.

The Soldiers' input could lead to design changes to any final product. However, no decision has been made on whether the LMG will eventually be fielded.

SPC Brandon Smith, an Infantryman, spent two weeks comparing the weapons.

"I could see a whole squad carrying it (the LMG)," he said. "You would own the battlefield."

To view video of the assessment and prior videos on the LMG on the Picatinny Arsenal YouTube channel go to http://www. youtube.com/user/PicatinnyArsenal or http://www.army.mil/ article/67917.

(Eric Kowal writes for the U.S. Army Research, Development, and Engineering Command.)

ARMY STUDY TO ASSESS RISK, RESILIENCY

The Army Study to Assess Risk and Resiliency in Service-members (STARRS) is the largest mental health risk and resilience study ever conducted among military personnel. Civilian Army STARRS researchers will help the Army identify factors that protect Soldiers' mental health and those that put Solders' mental health at risk.

The study cannot be accomplished without Soldiers' voluntary and confidential contributions. Voluntary Soldier participation is essential for the success of the study and the effort to protect every Soldier's well-being.

The Army STARRS study components include all phases of Army service such as a historical data study (HDS), all Army study (AAS), new Soldier study (NSS), Soldier health outcomes study (SHOS) and pre/post deployment study (PPDS). Each of these components examine psychological and physical health as well as life and work experiences. Some of the components may involve a voluntary blood donation.

Researchers talk with new Soldiers entering the Army about the NSS. They also randomly select units to participate in the AAS and PPDS. Some individual Soldiers will also be invited to participate in the SHOS. Selected Soldiers/units will attend a briefing where they will have the opportunity to volunteer. Only Soldiers who are selected or who are in the selected units are able to volunteer.

Confidentiality is vital to every aspect of Army STARRS. Because this research explores several personal topics, answers will be held in the strictest confidence. Any information that could be used to identify a Soldier will be removed from responses and other study materials.

For more information about the study, visit www.armystarrs.org or send an e-mail to ArmySTARRS@mail.nih.gov.

ARMY STARRS

www.armystarrs.org

SOLDIERS HELPING SOLDIERS

Squad Leaders Play Key Role

NCOs Form Cohesive Units Through Constant, Consistent Training

CSM STEVEN W. McCLAFLIN

Being a squad leader in the United States Army boils down to one essential thing — getting Soldiers to perform tasks that are required for successful completion of the mission. These tasks — whether it be cleaning a latrine or knocking out an enemy bunker — are all vital for the Army in their own way. At no level is this objective of getting Soldiers to do what you want them to do more difficult than at the squad level.

Leadership is difficult for a squad leader because his subordinates are the youngest and most untrained Soldiers in the Army. At all other levels of command, immediate subordinates are officers and NCOs who have demonstrated the professional skills required of the position they hold. These men and women have proven through years of professional development that if given a task, it will be accomplished. However, the task of the squad leader is to acclimate young Soldiers to the Army and its lifestyle and to convince them to do things they may not want to do or that they find dangerous. This is especially true in the current operating environment (COE), where in addition to the tasks required of a garrison Army, routine deployments and dangerous missions are expected to be accomplished without error by 18- and 19-year-old Soldiers.

The best approach for the squad leader is to mold his squad into one cohesive unit through constant and consistent training. Before each session of training begins, the squad leader should outline what the exact mission is and what each member of the squad

Below, paratroopers clear a compound of insurgents during a field training exercise at Fort Bragg, N.C., on 28 October 2011.

Photo by SGT Michael J. MacLeod

should do to ensure the squad as a whole can complete the mission. This ensures that each individual understands that his success and his squad's success is vital to the mission.

Within the sphere of this holistic approach comes the bottom-up approach to squad training and operations on the battlefield, known as "Squad: Foundation of the Decisive Force" (SFotDF). As described in the Army Learning Concept (Training and Doctrine Command 525-series), the dismounted squad is the lowest unit capable of conducting fire and movement as part of decentralized operations and is the strategic formation for success in future operations. This being so, training squads for modern and future operations will have to change to accommodate the needs of a 21st century Army.

The basic idea behind the commitment to boots on the ground is that at the division, brigade, battalion, company and even platoon level, U.S. forces can handily achieve overmatch in any engagement. However, the squad still faces the risk of being forced to fight a "fair fight." Despite improvements in technology and training over the past half century, squads essentially operate in the same manner as their World War II counterparts.

The squad will accomplish this through seven key goals:
- Dominating at any given place and time;
- Establishing favorable conditions while retaining the squad's ability to react;
- Connecting to the strategic effort through the existing network;
- Being physically fit, agile, culturally aware, and tested through immersive training;
- Organizing, equipping, training, and enabling as a formation;
- Maintaining the offensive initiative; and
- Having extensive knowledge of their environment; being adaptive and agile (advanced situational awareness training).

To accomplish these goals, the key priority is squad connectivity to the existing network. A decisive squad networked within itself, and to higher echelons of support, will allow it to spend more time on the offense and less time reacting to actions and incidents that take place, such as improvised explosive device (IED) attacks, snipers, and chance contacts that could be avoided through connectivity (and situational awareness). Currently, the force is equipped with technologies such as Nett Warrior and linked to the company intelligence support team (COIST). In the next fiscal year and following years access to precision targeting, direct linkage to higher echelons, and "push down" situational awareness/situational understanding will become standard for the maneuver squad in forward environments. These changes will give the squad access to the common operating picture that is available at all other levels of command now — except the squad.

The next priority is mobility and force protection. The year 2012 will bring enhanced night vision goggles, individual gunshot detection, and individual Soldier protection (enhanced combat helmet, pelvic protection, etc.). There will also be an increase

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in the availability of working dogs for squads to utilize to their advantage. Along with these new technologies, there will be tangible upgrades to existing equipment, such as lightweight body armor and lighter weapons and ammunition. Other possibilities include portable robotics and portable mine-clearing equipment which could give the squad explosive ordnance disposal capabilities, expanding the capabilities of the nine-man squad.

Improvement of the human dimension and leadership development areas is also critical to expanding the squad's capabilities. It will be the squad's improved ability to predict, process, and analyze information on the battlefield that will provide it with overmatch. This will be done by refining many of our battlefield leadership courses. These courses will be provided/attended by squad leaders along the course of a career at the appropriate time. The NCO Education System (NCOES), Structured Self-Development courses, organizational training, and what is learned through One Station Unit Training (OSUT) are all factors that are being considered. Furthermore, every member of the squad is expected to seek additional training (Ranger, Jumpmaster, Pathfinder, Battle Staff, Master Gunner, etc.) to not only further personal development but also provide the squad with assets enhancing its overmatch potential. The success of our squads will be built upon the drive of our professional Soldiers in the operational and generating force. These Soldiers and NCOs must internalize the profession of arms and everything that comes with it.

We must give the squads all the assets and capabilities they may need, further their training on the useful employment of those assets, and then entrust squad leaders with the flexibility to utilize their fighting force on the battlefield in the most effective way. We will use mission command to best utilize the best trained and most experienced NCO corps we have had in the history of the U.S. Army. This is the 21st century Army, and this is how we will continue to lead the way as the most lethal, efficient, and effective fighting force on the face of the planet. Follow me!

CSM Steven W. McClaflin currently serves as the top enlisted Soldier of the U.S. Army Infantry School, Fort Benning, Ga. He enlisted in January 1985 and attended Infantry One Station Unit Training at Fort Benning. During his 26 years of active federal service, CSM McClaflin has held numerous leadership positions to include squad leader, section leader, drill sergeant, ranger instructor, rifle platoon sergeant, scout platoon sergeant, battalion operations sergeant, first sergeant, battalion command sergeant major, brigade command sergeant major, and assumed the duties and responsibilities as the 29th U.S. Army Infantry School command sergeant major on 16 February 2010. CSM McClaflin's assignments include serving with the Multinational Force and Observers in the Sinai Peninsula, Egypt, and Operation Desert Shield/Desert Storm, Saudi Arabia and Iraq respectively, Delta Company, 2nd Battalion, 325th Airborne Infantry Regiment; Operation Enduring Freedom, Afghanistan, Delta Company, 1st Battalion, 505th Parachute Infantry Regiment; Operation Iraqi Freedom II and Operation Iraqi Freedom 06-08, Task Force 1st Battalion, 26th Infantry; and Operation Iraqi Freedom 08-10, 172nd Heavy Brigade Combat Team, Multi National Division-South.

EXCALIBUR EMPLOYMENT IN AFGHANISTAN:
ARMY AND MARINE CORPS DIFFERENCES

MG (RETIRED) TONEY STRICKLIN

Our country has been engaged in a long and costly war for more than a decade. At the same time, the military services have made major changes to remain relevant and to adapt to an enemy grounded in 12th century tribal culture but fully adept at prosecuting a 21st century insurgency.

The U.S. Army and U.S. Marines Corps (USMC) have spearheaded our nation's efforts on the ground. While taking the fight to our enemies in forbidding terrain and circumstances, the Army has gone through significant organizational and training adaptations to better prepare itself for the war we fight today and those in the future.

Unfortunately, the U.S. Army Field Artillery branch has seen more than its share of Army level, top-down, directed changes that, while well intentioned, have created unintended consequences for our current organizations. If these unintended consequences are not corrected, the greater concern may be the long-term impact they will have on our ability to decisively defeat our adversaries in future wars. This article is intended to address one aspect of that Army level, top-down change that is adversely affecting the Army in Afghanistan and contrasting it with how the USMC field artillery units are thriving in the same environment.

Fire support coordination organizational changes to field artillery units over the past decade have had unintended consequences for the employment of precision munitions in theater, especially the employment of the M982 Excalibur, an extended range guided artillery shell. The USMC has not been subjected to the Army's organizational changes, and they are able to employ Excalibur at a significantly more frequent rate than the Army in Afghanistan. In researching this article, I was interested in all aspects of why the Army was not employing Excalibur at a rate similar to the USMC.

Between October 2010 and April 2011, Army maneuver commanders employed Excalibur in Afghanistan only 11 times. During the same six-month period, USMC commanders fired Excalibur 149 times and heralded its effectiveness. Similar rates have remained consistent over recent months. USMC commanders used Excalibur 13 times more frequently than Army commanders — a remarkable statistic given that the weapon is equally available to both services and its effectiveness is beyond expectation, according to the USMC.

Typically, the engagement of al Qaeda and Taliban forces in Afghanistan occurs in areas and locations where the potential for collateral damage is a certainty. We must minimize the unintended consequences of the war. Excalibur gives maneuver commanders the organic capability to deliver the precision necessary to avoid civilian casualties and collateral damage. On 3 August 2010, GEN David Petraeus released his guidance for conducting counterinsurgency (COIN) operations in Afghanistan. He said, "We can't win without fighting, but we also cannot kill or capture our way to victory. Moreover, if we kill civilians or damage their property in the course of our operations, we will create more enemies than our operations eliminate. That's

An artillery cannon crewman from the 1st Battalion, 12th Marines, pulls the lanyard of a M777 A2 Howitzer during a fire mission in Helmand Province, Afghanistan.
Photo by SGT Earnest J. Barnes, USMC

exactly what the Taliban wants. Don't fall into their trap. We must continue our efforts to reduce civilian casualties to an absolute minimum."

The Marine Corps has overwhelmingly embraced Excalibur's accuracy, lethality, and its ability to minimize collateral damage effects. It can engage targets close to friendly forces; it can engage targets that require extraordinary precision; and it can reduce the logistics tail that, in the past, required mountains of "dumb-iron" munitions. Excalibur is designed to be employed against targets where collateral damage must be minimized and where the target is accurately located. Excalibur is best used in situations where troops are in contact, friendly forces are within 100 meters of the target, and where collateral damage must be limited. With Excalibur, "danger-close" is a technique that may be no longer necessary. I have read reports that Army units using Excalibur are surprised and disappointed that it didn't destroy a building that had been engaged. Other munitions are engineered to destroy structures and kill its inhabitants — Excalibur is engineered to provide a precision kill without destroying the structure or infrastructure surrounding the target.

After much research, I believe that the single greatest impediment for why Army maneuver units do not employ Excalibur at a rate similar to the USMC is the loss of fire support coordination functionality at the brigade combat team (BCT) and division levels. This is manifested in the loss of the Army's senior fire support coordinators (FSCOORDs) in the BCT and division headquarters and the elimination of the division fire support element. Although organic fire support officers (FSOs) remain assigned to the BCT and division, their experience, training, and access to senior maneuver commanders is not as effective as that of senior FSCOORDs. In today's organizations FSOs may not function as the full-time FSO on a day-to-day basis. Army modularity force structure changes eliminated the brigade fire support element from the direct support artillery battalion and made it organic to the BCT. The Army's decision to inactivate its division and corps artilleries eliminated the fire support coordinator for divisions and corps that make up many joint task force (JTF) organizations. Those colonels (formerly division artillery commanders) and brigadier generals (formerly corps artillery commanders) who served as the senior FSCOORDs had the training, experience, confidence, and access to the senior maneuver and JTF commanders that our current field artillery commanders do not. The senior FSCOORD's credibility had a profound impact on brigade, battalion, and company commanders' ability to deliver indirect fires for their units. Simply stated, the lack of senior fire support coordinators inhibits the tactical and operational understanding that U.S. Army maneuver commanders need to employ Excalibur and other precision munitions at the appropriate time and circumstance. This is not an indictment of the Army or our field artillery commanders. Instead, it points to a significant gap regarding support relationships between senior commanders and multiple organizations. As the Army made its modularity decisions a few years ago, I confirmed that it was the intent of senior Army leaders to later review the

Other munitions are engineered to destroy structures and kill its inhabitants — Excalibur is engineered to provide a precision kill without destroying the structure or infrastructure surrounding the target.

sweeping organizational changes that were made to address any unintended consequences. Changes in fire support coordination structure have created significant unintended consequences across the U.S. Army and the BCTs. All of the evidence I have reviewed suggests that today's maneuver commanders and the fire support officers serving in BCT and higher headquarters have significantly less functionality and expertise today than was present in similar organizations 10 years ago.

But fire support isn't the only inhibiting factor affecting Excalibur employment. For a combat capability to be used effectively and consistently, it must be readily available to the maneuver commander regardless of weather, time of day, or availability of other assets.

Another significant reason why Army units do not use Excalibur more frequently is that Infantry BCT commanders do not have an organic weapon capable of firing Excalibur. The Army IBCTs have no organic LW155mm howitzers in their modified table of organization and equipment (MTOE). Many IBCTs, however, have task organized in Afghanistan, and that task organization includes an LW155mm howitzer battery.

My research also indicates that there is no or little training for the delivery of Excalibur in the IBCT prior to deployment because the system is not available during the pre-deployment training at the Joint Readiness Training Center (JRTC) at Fort Polk, La. The USMC, however, has the LW155mm howitzer as its direct support cannon system, which provides a full Excalibur delivery capability. With the non-line of sight launch system (NLOS-LS) terminated by the Army and no LW155mm howitzers to fire Excalibur in the IBCT, the Army has no organic means to employ precision munitions in its IBCT. They have instead relied heavily on close air support (CAS) to deliver precision munitions. Composite field artillery battalions may be the only near-term solution for the Army now that NLOS-LS has been terminated. Field artillery precision munitions should complement tactical air and attack helicopters and provide the maneuver commander scalable engagement options for a variety of targets. It also gives the maneuver commander a 100 percent organic capability, day or night, good weather or bad, 24/7, to deliver precision attacks at the designated time and place of his choosing, regardless of whether or not close air support is available.

Air space command and control is another significant factor affecting Excalibur employment in Afghanistan. Some may argue this is the most significant factor. The Marine Direct Air Support Center is responsible for coordinating direct air support missions along with the Fire Support Coordination Center. As a result, the fire support coordination measures associated with artillery and air support are much less complex than what the Army has to deal with. Marine Excalibur missions are sometimes cleared at the battalion/regimental combat team as opposed to Army clearances that must be elevated to the Air Support Operations Center/ Coalition Air Operations Center or International Joint Command in Afghanistan. For U.S. Army troops in contact, this coordination

procedure is clearly non-responsive to the needs of the maneuver commander. However, the position of units also affects why USMC commanders are so much more likely to employ Excalibur against al Qaeda and the Taliban than Army commanders. In the north, the Army must contend with many more command layers than the Marine Corps, including NATO. In the east, Army units have CAS only 10 minutes away which creates an overreliance of that asset. There is no guarantee that our nation's next fight will readily have CAS only 10 minutes away. Organic delivery means must be available for Army/JTF commanders.

Finally, in a discussion about why Army units are hesitant or unwilling to employ Excalibur, I was surprised to hear a young, former FSO say that Excalibur is so expensive that he was hesitant to use it. This is an example of a training issue that should be easy to solve. Young officers and NCOs should understand that once the institutional Army procures a munition for employment in combat, its cost is not a factor in the decision process of how best to kill the enemy or save American lives. Excalibur shells do not cost $100,000 per round. The cost of Excalibur 1a is now $80,000 and 1b is $40,000 — it's not as inexpensive as the Army would like, but it has not yet been procured in quantities that will reduce individual unit cost to a more desirable amount. Do our officers and NCOs think about the life-cycle costs of employing precision munitions from U.S. Air Force, USMC, or U.S. Navy tactical fighter bombers in support of them? I really don't think that enters the tactical or operational calculus of whether or not to employ air-delivered precision munitions. So why should it be a factor in employing Excalibur? In the December 2009 issue of *National Defense* magazine, then Commandant of the Marine Corps, GEN James Conway, stated that by the time security and transportation expenses were applied to USMC jet fuel destined for Afghanistan, the actual cost of one gallon of jet fuel was $400. For a typical FA18 Super Hornet internal fuel load, that is a cost of more than $800,000 of fuel for one aircraft. Many argued that this was not the actual cost of the fuel; however, it is doubtful that this factor, regardless of cost, was a consideration before a commander employed the FA18 on a target. Nor should any dollar cost be a factor of employing Excalibur on a target.

In my research for this article, I was impressed by the comments Marines made extolling the accuracy, speed, and lethality of Excalibur to defeat al Qaeda and Taliban forces. "Always on target. ... Two JDAMs missed the target, called in Excalibur and had a 'shack'. ... Accurate to a gnat's a__. ... At the end of the day, my CO always asks, what's the status of my Excalibur inventory? ... I fired at max range with a cold tube and still had a 10-meter hit. ... I had eight bad guys in a building, Excalibur went through the roof and got them all. ... It has given new life to the field artillery. … No collateral damage."

Perhaps the most telling story came from election day in Afghanistan: Two forward operating bases (FOBs) were attacked simultaneously by the Taliban. "We called in Excalibur on one of the targets at about 100 meters from us and had a direct hit. Because of the accuracy, not only did the Taliban retreat from our FOB, but also from the other one as well."

And, "we had eyes on our high value target with Scan Eagle but couldn't get him, even with a gunship. He went into a small

A Soldier with the 2nd Battalion, 11th Field Artillery Regiment fires an Excalibur round in Baghdad, Iraq, on 26 April 2008.

courtyard and we hit him in the forehead with an Excalibur with no collateral damage to the surrounding buildings."

The last and most important comment made by a Marine was, "Excalibur saves Marines' lives."

Excalibur is a very accurate and effective munition, and there are some steps the U.S. Army should immediately undertake to make it more responsive to maneuver commanders. First is to repair the unintended functionality loss of fire support coordination in the Army. We need senior field artillery officers as FSCOORDs responsible for advising, training, and mentoring maneuver commanders on the employment of fires. Secondly, the Army must develop a less cumbersome and more responsive airspace coordination process. When the process cannot support troops in contact, it is ineffective and must be fixed. Thirdly, IBCTs must have an organic weapon to employ precision munitions — today they have no organic system capable of delivering the Army's precision munitions. Equipping changes must make the LW155mm howitzer organic to the IBCT. Finally, as units prepare to deploy to Afghanistan, it is essential that they train as they are going to fight by firing Excalibur. The National Training Center at Fort Irwin, Calif., is capable of this, but JRTC does not allow the IBCT to fire Excalibur during training. These are five modest changes that if incorporated will enhance our BCTs effectiveness and save lives today and in the future.

MG (Retired) Toney Stricklin served 32 years as a commissioned officer and commanded the U.S. Army Field Artillery Center and Fort Sill, Okla., from July 1999 to August 2001. He is now chairman of the consulting firm TDRS LLC. He was appointed by former Secretary of the Army Pete Geren, as Civilian Aide to the Secretary of the Army, Oklahoma (West) from 2008 to 2010, and Oklahoma Governor Mary Fallin appointed him to the Oklahoma State Regents for Higher Education in 2011. MG (R) Stricklin continues to provide leadership and selfless service to the Lawton-Fort Sill community.

MEETING THE FIRE SUPPORT CHALLENGE

COL GENE MEREDITH AND COL RICHARD M. CABREY

From discussions with recently deployed and redeployed leaders from the U.S. Army and Marine Corps, the topic of M982 Excalibur employment has surfaced in numerous forums. These discussions highlight some of the unintended consequences modularity has had for the Army and specifically for the field artillery. These unintended consequences have not only caused degradation in the ability of field artillery units to provide indirect fires (Excalibur included) but have also caused degradation in the entire fire support system. The good news is the Army and the Fires Center of Excellence (FCoE) have already recognized the situation and have taken/are taking steps to mitigate these unintended consequences.

The U.S. Marine Corps has done a great job employing the M982 Excalibur in Afghanistan; however, it must be noted that the fight they face in the Regional Command South (RC-South) is very different from the one the Army faces in the Regional Command East (RC-East). In fact, if one examined the total number of artillery rounds fired in RC-East vs. RC-South over the last eight months, the Army shot 22 times the total number of rounds that the Marine Corps fired. Therefore, direct comparison of a single munition does not provide the entire picture. Additionally, the U.S. Air Force has been focused on supporting the close air support (CAS) mission in Afghanistan since there has been no need to execute air interdiction and counter air missions. This has created a situation of unprecedented CAS availability for the maneuver commander.

Although this has provided excellent results in Afghanistan, it has also had the second order effect of allowing the forward observer and his maneuver commander to become extremely reliant on CAS for fire support. This is a luxury we may not have in the next conflict. One benefit of the CAS availability is the validation of the joint fires observer (JFO) program that has been ongoing since 2006. After acknowledging these facts, we must also acknowledge that over the course of almost 10 years of persistent conflict, degradations in Army fire support training, certifications, and leader development have occurred. Modularity has had a contributing effect of degrading the entire fire support system from Army corps through brigade combat team (BCT), thus not providing the maneuver commander with the quality of fire support he requires to accomplish his mission. The Fires Center of Excellence's mission has been/is to improve the entire fire support system through several venues.

The FCoE is currently pursuing an initiative that will address these changes through a force design update (FDU). The FDU will reorganize fire support Soldiers and leaders into the fires battalions, facilitating standardized fire support training across the BCT. This would institutionalize fire support training "best practices" to ensure critical certifications through Table XII are conducted to standard and facilitate the professional development of fire support personnel.

U.S. and Iraqi artillerymen fire 105mm howitzers during live-fire training on Al Asad Air Base, Iraq, on 21 February 2010.
Photo by SGT Michael J. MacLeod
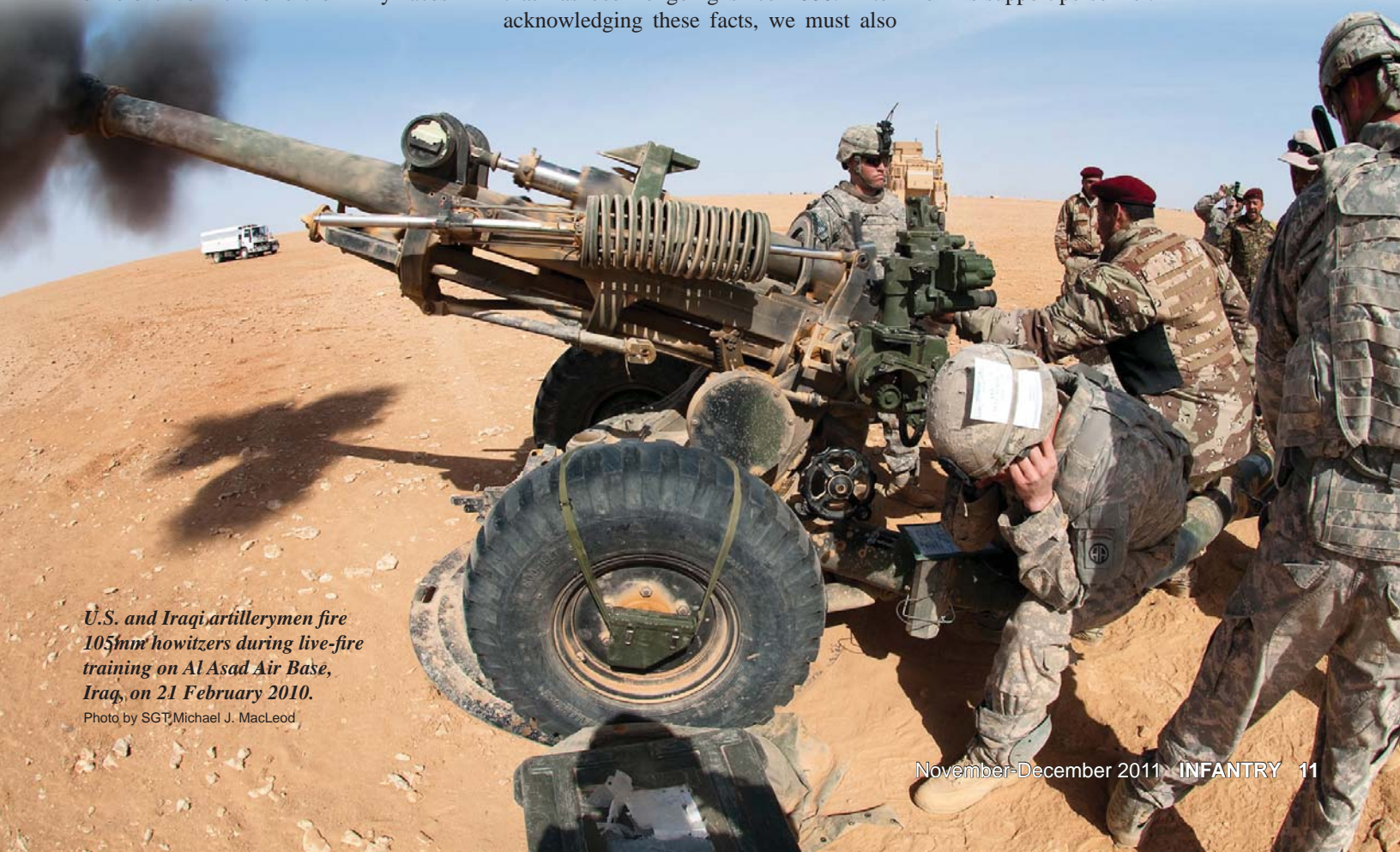
Fire support teams will continue to integrate with their maneuver companies during the train/ready phases of Army Force Generation but will place the responsibility of certification and training on the green tab fires battalion commander, thus ensuring a unity of effort for training the entire fire support system belongs to one commander. The concept paper for reorganization has been agreed upon by both the FCoE and the Maneuver Center of Excellence (MCoE) commanders and is currently awaiting U.S. Army Training and Doctrine Command (TRADOC) and Headquarters, Department of the Army (HQDA) approval.

The second organizational change/FDU is the composite fires battalion for the Infantry BCT. This organization will consist of one M777 battery and one or two M119A2 batteries. The FDU will provide greater flexibility, mobility, range, and lethality to the IBCT commander in addition to the precision capability found in the 155mm weapon system. The composite battalion FDU has been approved by Army Capabilities Integration Center (ARCIC) and is currently in staffing at HQDA. In the interim, IBCT units train on the M777 prior to deployment to Afghanistan and/or have an M777 battalion attached to them in theater. The follow-on effect of this FDU will be a renewed emphasis on fire support in the IBCT, specifically training precision fires tasks for employment of a weapon system that was not previously resident in their formations.

Along with organizational changes, doctrine is also being addressed. Most importantly is the role of the organic field artillery battalion commander to the BCT and the fires brigade commander to the division.

In accordance with the new FM 3-09, *Fire Support* (Final Approved Draft), Chapter 2-17: *"The fire support coordinator is the brigade combat team's organic Fires battalion commander; if a fires brigade is designated as the division force field artillery headquarters, the fires brigade commander is the division's fire support coordinator and is assisted by the chief of Fires who then serves as the deputy fire support coordinator during the period the force field artillery headquarters is in effect. The fire support coordinator (FSCOORD) is the primary advisor on the planning for and employment of field artillery and fire support. The responsibilities and authority given to the FSCOORD should be fully delineated by the supported commander. The FSCOORD may be given authority by the commander to:*

1) Provide for consolidated and focused FS-specific training, certification, readiness, and oversight (personnel management, equipment issue, and training);

Photo by SGT Michael J. MacLeod

A platoon leader and forward observer with the 1st Brigade Combat Team, 82nd Airborne Division determine grid coordinates during a live-fire exercise at Fort Bragg, N.C., on 9 June 2011.

2) Facilitate establishing standard operating procedures across the brigade (to save time and ensure a single standard);

3) Ensure efficiently resourced training packages. Although this doctrine change does not return to the concept of a division artillery and direct support battalions it does clearly put FA commanders in charge of the entire fire support system."

FM 3-09 has been approved by the FCoE commanding general and received "final approved draft" status from the Combined Arms Doctrine Directorate (CADD) for publishing.

The FCoE is implementing changes in fire support system institutional training as well. The skill set required to call for and execute precision fires missions at the forward observer level is complex. Use of equipment like the pocket-sized forward entry device (PFED) and knowledge of the precision fires software must be second nature in order to execute time-sensitive missions in the combined arms maneuver/wide area security (CAM/WAS) environment. This issue may be indirectly linked to the lack of formalized training while fire support personnel have been assigned to maneuver formations, but no direct correlation should be made. However, within the Field Artillery School and specifically in the NCO Academy, this education has received renewed emphasis. With the most recent Basic Officer Leaders Course, each student will complete the Joint Fires Observer Course curriculum and attend a two-week assignment-oriented training for JFO certification. Although designed to enhance the ability to direct aviation down to platoon level, the instruction includes target mensuration and collateral damage estimation (CDE), which are skills required to

employ precision munitions. Additional classes added to the BOLC-B program of instruction (POI) include:

1) Excalibur/precision-guided munitions — 6 hours

2) Precision Strike Suite-Special Operations Forces/Collateral Damage Estimate (PSS-SOF/CDE) — 8 hours

3) PFED — 8 hours

4) PFED integration in call-for-fire trainer/live fire

5) PFED use during walking shoot/fire support lane and static observation post operations during Redleg War

The NCO Academy has also recently adjusted curriculum to improve the skill set required of our 13F NCOs. In the Advanced Leader Course, they have added 40 hours of target mensuration and training on the PFED with precision software. The Senior Leader Course has expanded for 13F as well to include weaponeering, target mensuration and joint operations targeting process. Warrant Officer Basic Course students receive 40 hours of instruction on CDE and an additional 40 hours of instruction on target coordinate, mensuration, both tasks directly applicable to firing precision munitions. Warrant Officer Advanced Course students receive 80 hours of instruction in joint operational fires and an additional 32 hours of instruction on target coordinate mensuration. Within the curriculum of Advanced Individual Training (AIT), recent POI adjustments include PFED familiarization training into 13F AIT POI. Although not a skill level 10 task, familiarization training and hands-on opportunities on the observation post exposes them to equipment that is in their future fire support teams.

Collective training is another area being addressed. While it is true that the IBCTs cannot live-fire Excalibur at the Joint Readiness Training Center, Fort Polk, La., due to range restrictions, we are taking steps to address this issue at Fort Polk and with the program manager for the M982. The issue is the Fort Polk training area is not large enough to accommodate the standard surface danger zone (SDZ) roughly 30x30 kilometers to meet the 1:1,000,000 criteria from AR 385-63, *Range Safety*. Excalibur can currently be fired only at the National Training Center, Fort Irwin, and Twentynine Palms, Calif.,

Although modularity may have had a contributing effect on the ability of the fire support team to provide indirect fires due to unforeseen second order effects on the field artillery, the FCoE has and currently is addressing these issues across the doctrine, organization, training, materiel, leadership, education, personnel, and facilities (DOTMLPF) domains. Excalibur usage is just one symptom of a larger issue that is currently being corrected.

because these are the only installations with maneuver areas large enough to account for the surface danger zone. The program manager (PM) for Excalibur is planning to implement a software change on block Ia-2 Excalibur round that could potentially shrink the SDZ by up to 50 percent of the current size. This change, if implemented, will allow firing of the M982 at other installations. Although live-fire training on Excalibur and other indirect fires munitions is important, they can all be trained in the dry-fire mode at any location. This is critical for units based outside the U.S., since it will never be possible to live fire the M982 in most OCONUS training locations. What JRTC and the other combat maneuver training centers provide is the opportunity to train the entire fire support system, and this is what is absolutely critical to providing the maneuver commander the fire support he requires to accomplish his mission.

In order to further improve the fire support system, the field artillery commandant has personally attended maneuver pre-command courses to discuss the training and use of fire supporters in the BCT formations. These discussions also include the ability of their fire supporters to integrate the use of precision fires if properly trained and equipped. The commandant has also provided guidance to the MCoE Fires Cell, which has in turn instituted a number of efforts in the maneuver basic officer leadership course (BOLC) and the Maneuver Captains Career Course (MCCC). Infantry and

Armor BOLC receive overview briefs on PSS-SOF and PFED and demonstrations of the equipment. MCCC students are offered an elective on precision fires, which provides more details/aspects of precision fires and includes hands-on training with systems.

Although modularity may have had a contributing effect on the ability of the fire support team to provide indirect fires due to unforeseen second order effects on the field artillery, the FCoE has and currently is addressing these issues across the doctrine, organization, training, materiel, leadership, education, personnel, and facilities (DOTMLPF) domains. Excalibur usage is just one symptom of a larger issue that is currently being corrected. With the implementation of the FDUs, training, and doctrinal revisions outlined in this article, changes are being made to address the modularity induced unintended consequences. By implementing these changes, the FCoE will provide the Army a highly trained, skilled, and adaptable fire support system that is prepared to support the maneuver commander in the CAM/WAS environment today and into the future.

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COL Richard Cabrey serves as the commandant of the U.S. Army Field Artillery School at Fort Sill. He is a graduate of the U.S. Army Ranger School and has served in various Field Artillery positions throughout his career such as Infantry company fire support officer, platoon fire direction officer, platoon leader, operations officer, battery commander, and corps fire support coordinator. Cabrey also attended the Advanced Operational Arts Studies Fellowship (AOASF) where he served as a seminar leader in the School of Advanced Military Studies. Following the fellowship, he served as the commander, Operations Group COE in the Battle Command Training Program. He has also served in the position of assistant commandant of the U.S. Field Artillery School, and previously commanded the 214th Fires Brigade, Fort Sill.

BUILDING A BETTER HEURISTIC

CPT ADAM FROST AND 1SG MATT HOLBEN

Leveraging Wargaming Tools to Improve Company-Level Training

"In training, evaluators frequently focus on the linear phenomena rather than the non-linear. In other words, they focus on the science of war, which is based upon professional consensus and is authoritatively prescribed in doctrine, rather than the art of war, which is based upon intuition and genius."

— **TRADOC Pamphlet 525-5-500,** *Commander's Appreciation and Campaign Design*

On the battlefield, Soldiers have neither the time nor the resources to conduct complex deliberative decision analysis. Instead, we "remember our training" and make the best split-second decisions we can. If we look a little deeper, what's actually happening in that moment of judgment is something cognitive psychologists and decision analysts have long understood: when under pressure and faced with uncertainty, tactical decision-making by Soldiers is governed by heuristics — cognitive short-cuts or subjective "rules of thumb" built from our individual life experiences that allow us to reduce complex decisions to quick judgments.

Of course, the challenge is that this is not a perfect system. Heuristics are subjective and biased, and can lead us to sub-optimal decisions. Moreover, we can never be certain which mental shortcut a Soldier will take in that unforgiving moment or whether that subjective rule of thumb will be appropriate for the given situation.

Aspiring to help our Soldiers make objectively "right" tactical decisions is a wasted effort. We can, however, increase the chances our Soldiers will make better decisions by increasing the pool of experience from which they draw their heuristics when tasked to resolve complex, ill-defined problems quickly.

But the only way to increase experience is … experience, right? Perhaps not. For decades Pentagon wargamers have helped our senior leaders think through some of the most complex decisions in national security by immersing them in interactive scenarios where they can "game out" the implications of different decisions. When done well, these wargames help participants invest themselves in the narrative deep enough to suspend disbelief and more viscerally experience the psychological and emotional consequences of their decisions. Experiencing consequences through the pseudo-experience of the game actually nurtures heuristics in the minds of the participants, and we at the company level can learn from this model to improve our training.

Right or wrong, heuristics are one of the tools Soldiers use to judge whether to break contact or commit another fire team, whether to go left or hold fast. Rather than wish the problem of subjective decision making away, if we immerse our men in continuous, compelling, and — most importantly — interactive scenarios, individual units can help Soldiers leverage the same cognitive tools our leaders use to explore the toughest national

Soldiers from the 3rd Battalion, 116th Infantry Regiment, Virginia Army National Guard, assault the Fort Pickett Cherry Village training complex during annual training on 19 September 2011.
Photos by Virginia Guard Public Affairs Office

security problems to improve the mental tools they depend on in battle.

Since November 2010, A Company 3rd Battalion, 116th Infantry Regiment of the Virginia Army National Guard has experimented with a rudimentary but persistent interactive scenario-based training model with some notable success that may be of value to the larger Infantry community. The purpose of this article is to share both the theory and the lessons of our unit's experience to hopefully improve not only Company A's own training model but the quality of the larger Army training discussion.

Soldiers Rely More on Experience Than on Reason — A Short Introduction to Heuristics

Interesting arguments usually rest on one or more contentious premises. This one is based on the following: in a tactical engagement, Soldiers rely more on subjective experience than on objective, dispassionate reason. This is not to argue the relative merits of how Soldiers should make tactical decisions. Nor is this article implying that the objective science of war doesn't take on a more prominent role at the operational or strategic levels. It is, however, asserting that at the company-level engagement and below, circumstances often thwart the best intentions, and Soldiers have no recourse but to make life-altering choices without the benefit of deliberative objective decision analysis.

To say Soldiers don't have the luxury of rational decision making does not, however, explain how they actually do make decisions. While there is no universal agreement amongst psychologists on the mechanics of decision making under stress or uncertainty, in the 1970s Daniel Kahneman and Amos Tversky presented one compelling framework for understanding the phenomenon. They proposed that "people rely on a limited number of heuristic principles which reduce the complex tasks of assessing probabilities and predicting values to simpler judgmental operations" (*Judgment under Uncertainty: Heuristics and Biases,* edited by Kahneman, Tversky, and Paul Slovic). Research has since continued, and today psychologists define heuristics as, "simple, efficient rules, hard-coded by evolutionary processes or learned, which have been proposed to explain how people make decisions, come to judgments, and solve problems, typically when facing complex problems or incomplete information" (http://dictionary-psychology.com).

What would a heuristic look like? There are many categories, but two examples should suffice to give the reader a sense of the types of processes we're discussing.

1) Representativeness heuristics — where people judge the probability that object "A" belongs to class "B" based on their belief in the degree to which it is representative of the characteristics of class "B." An example would be when a Soldier judges a person to be an insurgent based on the degree to which the person embodies what the Soldier believes to be the characteristics of an insurgent.

2) Availability heuristics — where Soldiers subjectively assess the probability and consequence of a new situation based on the

Rather than wish the problem of subjective decision making away, if we immerse our men in continuous, compelling, and — most importantly — interactive scenarios, individual units can help Soldiers leverage the same cognitive tools our Leaders use to explore the toughest national security problems to improve the mental tools they depend on in battle.

"ease with which [comparable] instances or occurrences can be brought to mind," according to Kahneman and Tversky. Also known as "if you can think of it, it must be important," an example could be the degree to which a Soldier judges whether there will be an improvised explosive device (IED) within 50 meters after the overpass on Route Gold because the Soldier experienced IEDs after overpasses on other routes.

The challenge, however, is quite obvious: human thinking is rife with bias and vulnerable to inaccuracy. As we have learned through some very painful lessons, simply because a target is representative of the subjective stereotype of an insurgent does not mean he is a threat — that just because an IED was on Route Red does not mean there will be one on Route Gold.

So is the Soldier eternally tied to a flawed decision-making process? Is there no way to overcome the cognitive biases of subjective decision making and help our Soldiers find the right solution to their tactical problems?

Such questions poorly frame the problem. Some of the best thinkers in the Army teach that military solutions to complex, ill-structured problems are never right or wrong; they can only ever be better or worse. Therefore, the true challenge is not how to make tactical decision making objective, but how to improve what is an inherently subjective exercise.

Why Gaming Works — How Games Build Heuristics

Any Soldier familiar with the military decision-making process (MDMP) knows wargaming is a fundamental tool in military planning at the battalion level and above. What they may not know is that wargames of varying complexity are used up to the highest levels of military command to think through some of the toughest national security challenges. What is pertinent for our discussion here is that the cognitive mechanics behind why wargames are such a powerful decision-making tool can be exploited at the company level to improve our training programs.

In 2009, Ed McGrady from CNA, a not-for-profit research and analysis organization, made a compelling argument for why wargaming is an effective tool for helping decision makers think through low-probability high-impact events, now more commonly known as Black Swans. In his CNA paper titled "Why Games Work: Games as Narrative Tools for Exploring Low-Probability, High-Impact Events," McGrady's argument centered on his assertion that "until an event is experienced, the physical and emotional consequences of the event will remain abstract," and that we are often shielded by the low probability of occurrence from fully thinking through the implications.

McGrady argued that wargames can help overcome this problem in a manner similar to how captivating prose helps a reader experience a great book. He wrote, "Between the literal presentation of words on the page and the reader's reaction, there is a place that does not exist in the real world, but has real effects

on the reader's mind. In literary theory this is l'entre deux¸ or the 'between place.' In this in-between world, where narrative is real and reality has retreated, the reader engages in what is known as 'suspension of disbelief.' The l'entre deux is real for the reader, even if it is nowhere to be found on the page."

When an author's words resonate, a reader suspends disbelief and, for the time he is immersed in the narrative, experiences the story as reality. When he puts the book down and returns to true reality, "the slower process of sorting out fact from fiction occurs," according to McGrady. Sooner or later the reader decides whether he can use the information in the real world. What he discards is slowly forgotten, but what he retains is information learned from this pseudo-experience.

More powerful than the "presented narrative" of a novel is the "constructed narrative" of an interactive wargame. In a well-designed game, the participants confront problems and make choices. Unlike the novel, the game responds and actually changes based on the choices made, making the participants themselves characters in the story. "Because they are dramaturgical actors in the game, the l'entre deux they occupy in the game is far closer to reality for them than it would be if they were passive spectators or readers of the narrative… All of this means that the players have more of their own identities, as well as their conception of what is real and fictional, invested in a game than they do in a prosaic narrative, and that investment can have a more substantial impact on the participants," wrote McGrady.

The implication is that a well-organized wargame actually amplifies the suspension of disbelief of the participants and, in doing so, provides the pseudo-experience of having already been

through that wargame's particular problem. Later, if confronted with a subjectively similar challenge, when those same participants fall back on their heuristic principles to help them rapidly make decisions, they have the pseudo-experience of the wargame to draw from as well. In short, a well-constructed wargame manufactures heuristics.

What do the heuristics that govern subjective decision making under uncertainty and the mechanisms by which wargaming imprints subjective lessons on participants have to do with a rifle company? In the fall of 2010, during the type of inspirational conversations that only happen at a company command post around 1 a.m., A/3-116th hit upon an idea. It struck the authors as a reasonable hypothesis that if we could design our field training exercises as a constructive narrative, where our Soldiers were actors in a script but whose actions shaped not only the outcome but how opposing forces (OPFOR) fought, then perhaps we could help the unit invest in the scenarios, collectively suspend disbelief and make the lessons of the field training resonate more acutely. Perhaps we could purposely build heuristics and arm our Soldiers with a greater pool of pseudo-experience they can draw from when it matters most.

What Would This Model Look Like? A/3-116th's Plan

Armed with this hypothesis, Company A set out to experiment by designing a training plan around a standard wargame template: the scenario (our road-to-war), a red team (designated OPFOR), and an adjudicator cell (our command team).

To be effective, the scenario had to have certain characteristics. First, it had to be continuous. The script had to endure for the training cycle to give time for both the scenario to evolve and for the Soldiers to experience the effects of their decisions. This implied a larger storyline than simply two-levels up from the squad or platoon operation order (OPORD). It also meant the narrative had to loosely nest with the battalion's training goals for the year, which in our case was squad-building to platoon-level operations.

It also had to be compelling. Soldiers know when we're pressing the "I believe" button, so every mission and OPFOR counter-move had to be plausible enough to sustain the suspension of disbelief. Therefore, the storyline had to be internally consistent. We compiled and edited a 40-page road-to-war background story about why A/3-116th deployed to this area, including national histories, ethnic and cultural information, and recent significant activities (SIGACTs). Our first sergeant then overlaid a map corresponding to that history over the installation map of where we normally train, complete with national borders and villages. From that moment, every tactical OPORD was drawn from that

During annual training in September 2011, Soldiers with Company A, 3rd Battalion, 116th Infantry Regiment maneuver around the Cherry Village training complex at Fort Pickett, Va.

source document, and every real location on post was referred to by its scenario name.

Finally, it absolutely had to be interactive. For the Soldiers to experience the effects of their decisions, the narrative of the scenario had to evolve in response to their actions (Examples: rough up the civilians on the battlefield too much and next time they won't cooperate with you; capture a high-value target and relieve pressure on a town and in two months the elder may invite you in for tea). Above all, the men had to understand how their decisions during one training event impacted future events.

The red team in a wargame typically exists to stress the blue team's decision making. In our case, our designated OPFOR, composed of the supply team and Soldiers in an administrative status, stressed

Soldiers with the Virginia Army National Guard's Company A, 3rd Battalion, 116th Infantry Regiment conduct a movement during annual training in September 2011.

our Soldiers by following a script with very explicit boundaries but substantial freedom of action within those limits. Their mission was always defined by the enemy situation paragraph of the OPORD, and we imposed certain rules to initiate contact for safety and training value. However, outside those rules everything was fair game. Our hypothesis was that, to stress our Soldiers' decision making, they needed to confront a thinking enemy who had a mission, resources, and the capacity for innovation.

This entire plan hinged on the capacity of the adjudicators (white cell) to facilitate the suspension of disbelief. In our case, the company command team decided what missions to run that simultaneously met battalion training goals but also furthered the evolving narrative. Additionally, we judged the implications of our Soldiers' decisions (whether they were too rough on the civilians or how that village elder would react to news of a local insurgent capture).

Did It Work?

Company A's trial program ran approximately six months, and the experience was encouraging. The scenario itself proved manageable at the company level, though we invested a substantial amount of time and energy up front to develop the road-to-war and supporting maps. After we briefed and handed out the documents, however, month-to-month management of the scenario's evolution proved no more difficult than an analysis of the after action reviews (AAR) and a monthly conversation on what to change. An unanticipated bonus for the commander was the ease with which we could produce tactical OPORDs. Guided by the road-to-war source document and our training objectives, we actually found ourselves more efficient in planning our field exercises. Moreover, we, too, became engrossed, debating whether it makes sense for OPFOR to take different courses of action.

Logistically, the program was easily supported. The OPFOR only required a few dedicated assets for communication, vehicles, and weapons, though in the future we'd like to leverage training aids and homemade materials to include uniforms and other items. The OPFOR Soldiers themselves proved invaluable, but we found they had to be designated and semi-permanent. The plan called for OPFOR to follow specific rules of engagement and repeat certain tactics, techniques, and procedures (TTPs) so the men would have a baseline to try to defeat. The OPFOR team could absorb a swap-out of one or two Soldiers per exercise, but any more and the institutional memory of the team diminished. Nonetheless, a semi-permanent OPFOR team dedicated to fighting our company month after month started to see patterns in how we fought. For example, after watching us for a month they suspected we were vulnerable to counterattack during actions on the objective — and were proven right. They even helped drive home the collective costs of individual mistakes when they taught one brave private the danger of hanging the barrel of his squad automatic weapon (SAW) out the doorway when standing guard.

Right, But Does It Actually Build Heuristics? Conclusions and Recommendations

The evidence is anecdotal, but we think so. Our proof is the handful of examples where Soldiers demonstrated learning that we could trace back to the constructive narrative. Though it is impossible to prove causation — that Soldiers learned lessons specifically because of this wargame-based training design — the correlation between this experiment and the increase in insightful comments, innovative solutions, and keen observations is compelling enough to warrant the presentation of this article. The following examples illustrate the sorts of experiences and comments our Soldiers shared.

Example 1: During the AAR on a presence patrol that turned

into an ambush, we asked how contact was initiated. After a series of uninspired responses, one young specialist in the support-by-fire element chimed in with (to paraphrase) "that's the third time they've hit us with sniper fire from a roof and sucked us into that village where I can't open up." With that comment, all the Soldiers realized that, in fact, OPFOR was repeatedly initiating contact with direct fire from an elevated position and then falling back to pull our dismounted troops into urban terrain with civilians to offset our firepower advantage. More to the point, they noticed a pattern that could only be visible in a continuous scenario with a deliberate OPFOR. Immersed in the scenario, our Soldiers learned a pattern and subsequently proceeded to experiment with new TTPs to overcome OPFOR's advantage (with some notable successes as well as entertaining failures).

Example 2: Frustrated by the casualties caused by a sniper holed up on a rooftop, a new platoon leader (PL) made the decision to send a Soldier up a narrow ladder to clear the roof, only to have him become a casualty as soon as his head breached the opening. When we returned to the same training area months later, a different platoon leader confronted with a similar problem instead opted to direct a squad to clear a taller building and suppress the sniper from greater elevation before clearing that roof. When asked where he came up with that idea, the PL replied, "Come on, sir, I wasn't making that mistake." When confronted with a similar challenge, the second PL fell back on his subjective experience learned from observing his colleague's mistakes. He made a rapid decision with imperfect information, but he did so with the benefit of having observed a colleague think through this problem once before.

Example 3: Towards the end of an AAR for a raid on a stand-alone house we asked a standard closing question: "Was there anything else you noticed about how OPFOR fought?" The silence indicated we'd reached the limits of the AAR when a young private sounded off with, "They didn't fight together." When asked to explain, the Soldier pointed out that once they had entered the house, the OPFOR fought in separate rooms individually and never called out or coordinated with each other. Even OPFOR seemed surprised, and it became apparent that this particular TTP was unintentional. At that moment the white cell realized the narrative had evolved beyond what we had programmed and Soldiers were interpreting events and innovating solutions in ways we couldn't predict — precisely the sort of creative thinking we had hoped to unlock.

Our starting premise is that in a tactical engagement, Soldiers rely more on subjective experience than on objective, dispassionate reason. Rather than wishing away the problem of subjective tactical

Rather than wishing away the problem of subjective tactical decision making, it should be the role of the company training plan to nurture Soldier decision making by working with the constraints of the human mind and leveraging those cognitive mechanisms Soldiers genuinely depend on when it counts.
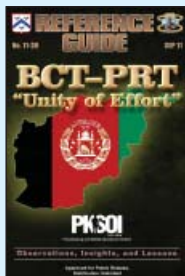
decision making, it should be the role of the company training plan to nurture Soldier decision making by working with the constraints of the human mind and leveraging those cognitive mechanisms Soldiers genuinely depend on when it counts. Rightly or wrongly, Soldiers will turn to their heuristics in combat. But we don't have to look to deployments alone to build the experience their snap judgments depend on.

A/3-116th found that governing our training with continuous, compelling and, most importantly, interactive scenarios increased the chances individual Soldiers would invest in the narrative and suspend disbelief. Though we will never be able to prove causation, we found a strong correlation between this training and the increase in insightful comments, innovative solutions, and keen observations of our Soldiers. It is our contention that this anecdotal evidence is sufficient enough to attempt to instigate a larger discussion that we hope will grow from this article.

However, we should close with a note of caution. Nothing we can do will ever take away the right of a Soldier to make a worse decision. A/3-116th will never be able to confirm whether the subjective lessons Soldiers learned from this training were relevant to a future challenge. What's worse, only our Soldiers will ever be able to tell us whether the heuristic they used in some future unforgiving minute, helped or hurt their chances. In the end, we can improve the process on the margins, but decisions are individual choices — and those choices can be wrong. But that burden, of course, will forever be the Soldier's to bear.

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A PROPOSAL FOR A NEW MORTAR FIGHTING POSITION

SGT JOHN J. HAWLEY, USMC

Editor's Note: *This article first appeared in the September 2011 issue of the* Marine Corps Gazette *and has been reprinted with permission.*

The survivability of a mortarman, as well as that of whomever he is supporting, depends largely on the mortar fighting position (MFP). In the U.S. Marine Corps (USMC), entry level and advanced mortarmen are taught two primary MFPs. The first is detailed in Field Manual (FM) 7-90, *Tactical Employment of Mortars*. This MFP has been found to have several flaws, which led to the teaching of a second MFP, formalized in the program of instruction (POI) for entry level students at the USMC School of Infantry (SOI). The MFP currently taught at the SOI originates from a Marine Corps Institute (MCI) publication created in 1976 for the outdated 81mm mortar and has several problems associated with it. Flaws in both of these MFPs must be addressed and corrected in our institution's MFP curriculum. This article discusses each of these MFPs and examines a revised MFP designed to mitigate the weaknesses and combine the strengths of both current positions. The new MFP would take less time to construct, is more practical and, most importantly, would provide greater protection for the gun crew. The purpose of this article is to modify our current doctrine and promulgate these changes throughout the Marine Corps and other services.

Option 1

The MFP taken from the FM 7-90 consists of four major parts. The first part includes a circular pit in the center that contains the mortar system itself. The pit has a 3-meter diameter and a depth of 1 meter. The second and third major parts of the MFP are two personnel shelters opposite each other on the edges of the circular pit. Both shelters are 2.5 meters by 1.5 meters and contain three firing ports each. The fourth major part is an ammunition pit attached to the center circle and to the rear of the gun. Its dimensions are .8 meters by 2 meters. A grenade sump within the center circle and a charge box position directly outside the circular pit comprise ancillary portions of this MFP (see Figure 1).

A Marine with Weapons Company, Battalion Landing Team 3/1 loads an 81mm mortar for a live-fire exercise on 11 September 2011.
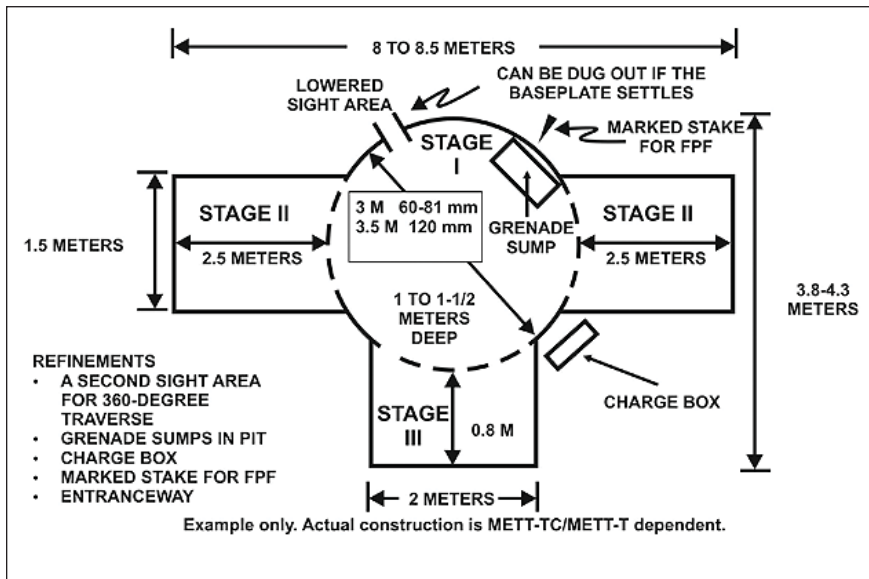Photo by SGT Elyssa Quesada, USMC

Figure 1

A major advantage of this MFP is the two personnel shelters with firing ports. These shelters provide a covered position from which to defend without crowding the gun in the event of an attack, direct or indirect, on the MFP. Since the firing ports coincide with the circle pit, they enhance the deliberate defense of the mortar section/platoon while keeping the mortarmen close to the gun. With six firing ports each, the shelters allow all members of the mortar squad a covered place from which to fight when engaged if the mortar is not needed. Another advantage to this MFP is the location of the charge box outside the circle pit. In case of a fire, the charge box will prevent fire from reaching the Marines and the ammunition. However, the main disadvantage of this MFP is that it does not provide any physical separation between the circle pit, where the weapon system and mortar squad are, and the ammunition.

This MFP also contains only one grenade sump. For a circle hole 3 meters in diameter, one sump will not suffice. With the mortar system and a six-man squad, it would take too long and present too many obstacles to kick the grenade into the sump. If Marines are in the shelter, it would take an excessive amount of time to reach the sump on the other side of the hole. Finally, this MFP features no water sump. There must be a place for the water to drain when it rains. Without a drain, standing water could cause the gun to lose its seat and become incapable of firing. Additionally, standing water would cause ammunition to corrode at a faster rate.

Option 2

The next MFP to discuss is detailed in the USMC Infantry Training Battalion (ITB) East's 0341 program of instruction (see Figure 2). This MFP consists of four major parts, just as the previous position does. First is the center hole, which has approximately a 2.5-meter diameter, a depth of 1 meter, and a 1- to 4-inch slope from the front of the circle to the back leading to the water sump. The second part is an ammunition pit that is roughly 1 meter behind the circle hole and is 2 meters x 1.5

meters. The ammunition pit and the center hole are connected by the third part, a trench with two legs (a.k.a. "dog legs"). Each leg is .9 meters long and .5 meters wide with a 45-90 degree angle between them. The fourth major part is a final protective fire (FPF)/ready ammo storage area that is along the right side of the gun. The ammo storage area is .5 meters x .9 meters and connects to the center circle. The center hole has two grenade sumps and a water sump at the opening of the connecting trench. What this MFP offers that the other does not is the FPF/ready ammo storage area. This storage area keeps the ammunition out of the path of the gun and ready for quick use. It also keeps the FPF ammunition separate, mitigating the possibility that FPF ammunition might be used for non-FPF missions. Another positive aspect of this MFP is the inclusion of two grenade sumps. Having a grenade sump on either side of the center hole increases the chance that a grenade will be successfully kicked into a sump. In addition this MFP includes a water sump, which allows water to drain. Should the sump fill with water, the slope ensures that the water will take longer to reach the gun, ultimately keeping the gun operational longer than an MFP with no water sump.

The disadvantages of this MFP are a lack of personnel shelter and overhead cover. The size of the hole does not allow the squad a place from which to engage the enemy. The absence of a personnel shelter also crowds the hole with six Marines occupying a space of 2.5-meter diameter, making it difficult to manipulate/fire the gun. With no overhead cover available, Marines are not able to escape the elements during a prolonged stay at the

Figure 2

Figure 3

connected to the circle pit by the third major part, trench that has three legs with two 90-degree angles, one between each of the legs. The fourth major component of the MFP is a personnel shelter 2.5 x 1.5 meters that can be dug on either the left or right side of the circle. The personnel shelter must be constructed with overhead cover. Connected to the circle pit on the side opposite the personnel shelter is the fifth major part, an FPF/ready ammo storage area .5 x 1 meter. This MFP in particular would adopt the stringer bunker diagram from Chapter 3: Planning Position in the FM 5-103, *Survivability*. The FM details the requirement for the position and features diagrams and charts detailing how to build the position to withstand a contact burst from an 82mm mortar, which must be the bare minimum standard. This type of overhead 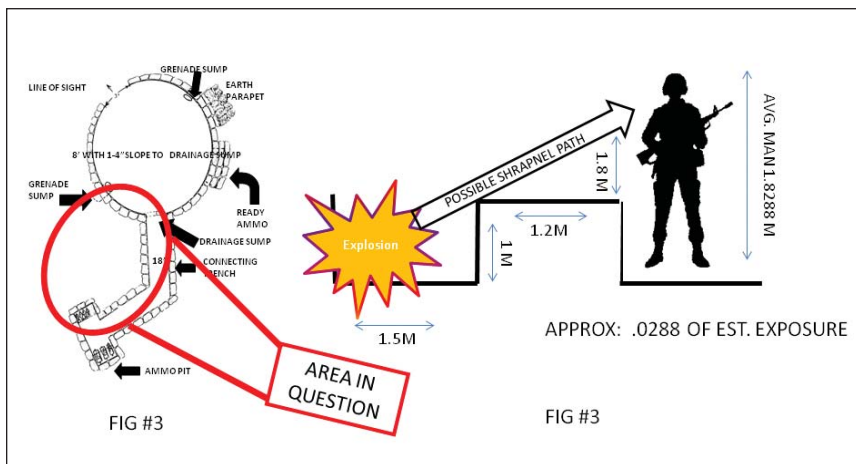construction would also be used on the ammunition pit. These two bunkers would protect both the ammunition and the Marines from the weather and other natural challenges that come with combat and defense. Unlike the other two MFPs, the two slopes incorporated into this MFP provide adequate drainage, allowing water to drain from inside the circle hole as well as from the back of the ammunition pit. Since the ammunition pit is separated from the circle pit by a trench consisting of three legs and two 90-degree angles, the distance between the edge of the circle pit and the edge of the ammunition pit is now 3 meters. This greater separation nearly eliminates the possibility that the average 6-foot tall Marine standing inside the circle pit will incur shrapnel injuries from an explosion in the ammunition pit. To strike the top of the average Marine's head, the shrapnel would have to travel through .96 meters of solid earth. This calculation does not take into consideration a parapet; it simply demonstrates how the proposed MFP nearly doubles the protection from an explosion in comparison to the two previous MFPs. This theory is again supported by simple geometry and trigonometry for right-angled triangles.
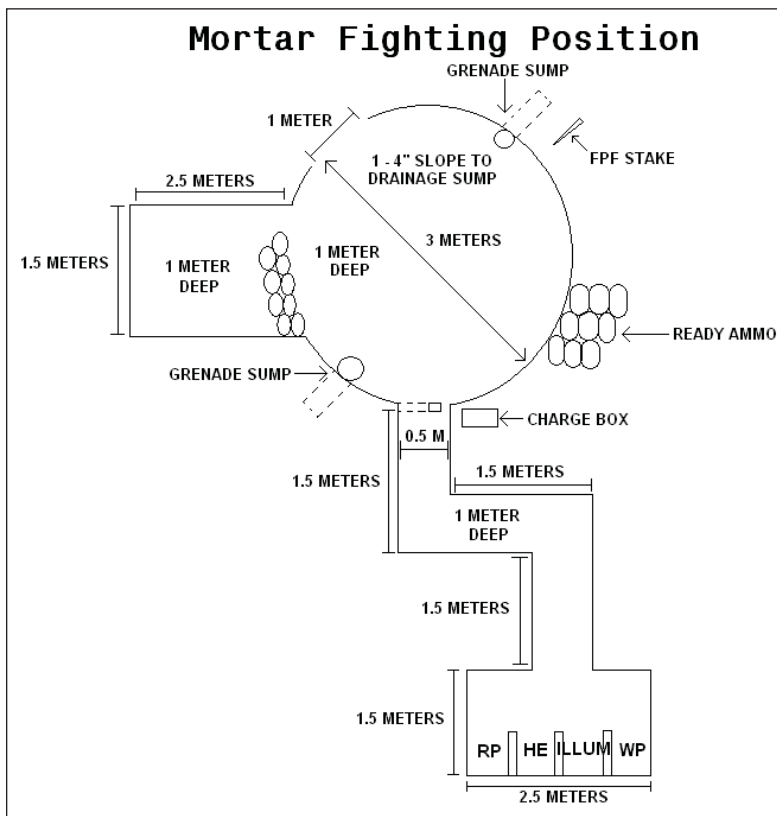
position. The MFP also provides no overhead protection from indirect fire. Lastly, this MFP has very little separation from the circle and ammunition pits. The one angle between the two legs of the trench may prevent shrapnel, but the angle and the small legs only separate the center hole and the edge of the ammunition pit by a mere .6 to 1.2 meters of solid earth. Using simple geometry and trigonometry, it is evident that with a separation this slight, shrapnel from any type of explosion within the ammunition pit would be capable of striking the average 6-foot tall Marine standing inside the circle pit (see Figure 3).

Proposed Solution

This article postulates that a better MFP can be created to encompass all of the beneficial characteristics of the aforementioned MFPs while providing practical solutions for any disadvantages. The proposed MFP is comprised of five major components (see Figure 4). The first component is a circle pit 3 meters in diameter, 1 meters deep, and featuring a 1-4 slope from the front of the hole to the back leading to a water sump. Inside the circle pit, two grenade sumps sit opposite each other. A water sump sits at the opening of the connecting trench, and a blast barrier wall separates the personnel shelter and the circle pit. Approximately 3 meters behind the circle pit is the second major part of the MFP, an ammunition pit 2.5 meters wide x 1.5 meters deep. The ammunition pit is

Another advantage of the proposed MFP is the reduced amount of time it takes to construct. Four separate classes of entry-level students at ITB East have successfully dug this proposed MFP, producing near constant data. The MFP detailed in SOI's POI

Figure 4

typically takes students about four hours to complete. The new MFP took students between three and three-and-a-half hours to dig. The total completion time for the new MFP was approximately three hours. This standard was achieved by using a T/O 81mm mortar squad, entrenching tools, and one set of pioneer gear (which is practical since 81mm mortars are vehicle mounted).

Another factor that must be taken into consideration is the probability that someone in the circle pit would be killed from blast pressure in the event of an explosion in the ammunition pit. Using basic equations from the 0351 MOS to determine lethal blast pressure at specific distances, one is able to figure the proper standoff distance for Marines to wear ear protection, with or without a blast blanket. For the blast pressure to be lethal, it has to be roughly 40 psi. If an explosion occurs in the proposed MFP's ammunition pit, a Marine would be exponentially safer

due to the greater distance between the crew and the ammunition pit. This distance allows the blast pressure to dissipate such that it may not prove lethal for Marines in the center pit.

In order to advance our profession, we must continue to think critically about our trade. When analyzed, the two MFPs listed in our manuals do not pass the test. This article has identified the current weaknesses and flaws in our MFPs taught in both Army and Marine Corps manuals and proposed a solution. The proposed MFP detailed in this article should be adopted in our manuals.

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Photo by SSG Andrew Smith

Soldiers with the 3rd Battalion, 509th Airborne Infantry Regiment conduct a fire mission in Paktika Province, Afghanistan, on 13 July 2009.

THE BATTLE OF ADWA

TIGRAYAN ARMY USES ENVELOPMENT, FRONTAL ATTACK TO ANNIHILATE ITALIAN FORCES

1LT ALI OROU SOUROU ABDEL-AZIZ, REPUBLIC OF BENIN ARMED FORCES

On 1 March 1896, in the vicinity of the Ethiopian town of Adwa, a local army led by Emperor Emmeye Menelik, also known as Menelik II, cut a colonialist Italian army to pieces.

Historians consider the Battle of Adwa, culmination point of the Italo-Ethiopian War (1895-1896), to be one of the most important events in the world. In fact, it was the first victory of an African nation against a European counterpart since Hannibal's successful battles against Rome during the Second Punic War 2,200 years ago. In the introduction to their book *The Battle of Adwa, Reflections on Ethiopia's History against European Colonialism*, editors Paulos Milkias and Getachew Metaferia wrote, "Adwa holds a significant place in Africa's history ... it challenges the demeaning Western conception of African cultures; it demonstrates that being targeted for colonization is not a prelude to fatality and that colonialism can be defeated..."

Beyond those historical, sociological, and geostrategic considerations lies a deep tactical lesson. Conducting a spoiling attack, the Tigrayan army made successful use of two forms of maneuver — envelopment and frontal attack — to annihilate an Italian brigade led by MG Matteo Albertone.

A look into the genesis of the Italo-Ethiopian War allows the assertion that the roots of the Battle of Adwa lie, at least, down to the triangular relations between Emperor Yohannes IV of Ethiopia, who was politically based in Tigray; King Menelik II of Showa, who was known for being ambitious and ingenious; and

U.S. Central Intelligence Agency

the Italian government, which wanted to colonize Ethiopia. During the second half of the 19th century, the Horn of Africa experienced a period of turmoil punctuated by significant events including internal and external battles, alliances and betrayals, friendship treaties and commerce treaties. Before and during this period, European nations like Germany, France, Great Britain, and newcomer Italy were eagerly willing to carve their empires throughout the African continent. This feverish imperialist obstinacy also known as the "Scramble for Africa" reached its climax at the Berlin Conference (1884-1885). It was obvious that the Horn of Africa and the adjacent Suez Canal — opened in 1869 — constituted a great strategic interest, and it logically triggered the European imperialist nations' desires. Guided

only by the principle of *divide et impera* (divide and conquer), they established contacts and relationships with many local chiefs and kings through a multitude of treaties. The main consequences of these Machiavellian politics, chiefly based on the provision of armament to their local — temporary or long-term — allies were the modernized weapons proliferation and the constant destabilization of the Ethiopian empire.

One of the major treaties that set the guns firing of the Italo-Ethiopian War was the Treaty of Wuchale (or "Uccialli" as the Italians spelled it); its primary goal was to secure Italian possessions in eastern Africa (Erytrea). Concluded on 2 May 1889 by the intermediary of Count Pietro Antonielli, in his dual role of official envoy of the Italian government and close friend of Emperor Menelik II, the "Italy-Ethiopia Treaty of Friendship and Commerce of Wuchale" had been established in a dual language — Amharic and Italian — version. Owing to the light linguistic discrepancy induced by or due to simple diplomatic chicaneries, this agreement failed to be read "like a typical non-capitulationist international document willingly entered into by two sovereign polities mutually seeking to normalize and enhance positive relations for present and future generations and regimes," according to Ayele Negussay's chapter "Adwa 1896: Who Was Civilized and Who Was Savage" that appeared in *The Battle of Adwa*. The main dispute rose over the interpretation of one of the treaty's articles, which stated that the Ethiopian king would involve the Italian government in matters dealing with other powers or governments. As

the months went by, the Italians read the article as Ethiopia being their "protectorate" and notified the other European powers. Menelik II refused point blank to admit to any kind of subjugation. He argued that his agreement to use the Italian government as a middleman was supposed to be if he so desired and not that he would be obligated to do so. This contradiction was the proximate cause of the Italo-Ethiopian War. During 1895 and 1896, the conflict moved from skirmishes to bloody battles (Amba Alagie, Mekelle), interspersed by many attempts to settle the dispute, and finally reached its culmination point at the Battle of Adwa.

On 29 February 1896, after failing to lure the Ethiopian forces to attack his entrenched positions around Mount Enticho in Tigray (the Ethiopians' most probable course of action), LTG Oreste Baratieri gave orders to his 20,000 Italian and native troops to conduct what was supposed to be a surprise attack on the Ethiopian troops massed in the vicinity of Adwa. For this mission, Baratieri's troops were arrayed in four brigades, each commanded by an Italian army general. With a fighting power of 17,700 effective fighters, the Italians had 14,519 rifles, 56 artillery guns, and no cavalry, according to George Fitz-Hardinge Berkeley in his book *The Campaign of Adowa and the Rise of Menelik*. In the center of their disposition was MG Guiseppe Arimondi occupying Mount Belah; and at his rear, at Rehbi-Ariani, was the reserve brigade, commanded by MG Guiseppe Ellena. MG Vittorio Dabormida, with his brigade, was occupying the spur of Mount Belah at the right of the mount itself. MG Matteo Albertone had to move and occupy the left flank of the Italian front by arraying his brigade on the mountains of Kidane Meret. This last brigade, equipped with three and a half batteries of mountain artillery (14 guns), was made of four native battalions plus the irregulars of Okule-Kusai and Gheralta, for a total of 4,092 soldiers, wrote Berkeley.

In an impressive display of national unity, a 100,000-strong army composed of contingents from almost every region and ethnic group of the Ethiopian empire was eagerly awaiting the Italians. Faced with the Italian plan, the Ethiopian imperial army had a coherent organization — notwithstanding the sarcastic opinion of British historian Berkeley who described it as a "feudal army, with hardly an attempt at modern organization ... the arms in the hands of the Ethiopians were modern, but the organization was, in many respects, very similar to that of the English at the Battle of Agincourt ..."

In their defensive positions, "the Ethiopian formation near Adwa resembled a cross to enable it to respond in the same manner no matter from which side the enemy's attack came," according to Milkias in his chapter, "The Battle of Adwa: The Historic Victory of Ethiopia over European Colonialism." The fighters, arrayed in a defensive position, were equipped with 40 cannons, 70,000 rifles (ranging from Remingtons to Martini-Henrys, Fusil Gras, Berdans, Mausers, Lebels, and Vetterlis), as well as spears and swords. Emperor Emmeye Menelik and his 35,000-strong imperial bodyguard and Empress Taytu with her 5,000 combatants were encamped at the monastery of Fremona in the center of the imperial army disposition. The Ethiopian main body was arrayed

> In an impressive display of national unity, a 100,000-strong army composed of contingents from almost every region and ethnic group of the Ethiopian empire was eagerly awaiting the Italians.

from the south of the Sheloda Massive (also known as Mount Selado) to the Mariam Massive.

When combined, the Tigrayan army numbered around 15,000 fighters, led by the charismatic and great nationalist Ras Alula. This is the enemy Albertone's brigade was recklessly and blindly moving up to in his attempt to reach his assigned position, according to Berkeley.

By dawn on 1 March, at the end of the three columns' approach toward the Ethiopian defensive positions, the *Negus Negasti* army conducted a spoiling attack which caught the Italians off guard. The Tigrayan army engaged the forward element of Albertone's brigade from the heights of Mariam Massive at 6 a.m. Reacting to this contact, the Italians' artillery fired on the Ethiopian formations, which were massed within the cannons' range. This caused many casualties. The Ethiopian troops scattered and attacked in smaller formations. Using their traditional half-moon formation, Ras Alula's and Ras Mengesha's infantries pressed the leading Italian forces while the two wings, supported by Ras Mikael's Wallo cavalry, achieved an envelopment of the opponents. The first battalion of Albertone's brigade was quickly surrounded and destroyed. Some Ethiopians, led by Dejazmach Balcha Abba Nefso, the hero of Adwa, deployed their quick-firing guns on the lower side of Mount Abba Gerima, setting an effective support by fire. This allowed Ras Alula and Ras Mengesha's Tigrayan fighters to finish crushing the remainder of Albertone's brigade by swift movements associated with a deluge of rifles firing, spears hurling, swords swirling, and hand-to-hand combat. They captured 14 artillery guns and destroyed the three other battalions. The annihilation of Albertone's brigade was complete.

In an attempt to assist his endangered left wing, Baratieri ordered his right wing to move up and link up with Albertone. After maneuvering for hours and despite one of Arimondi's battalions offering him an effective support by fire, Dabormida was unable to meet his commander's expectations due to the mass of Ethiopian forces isolating Albertone's brigade. As soon as the Italian's right flank was destroyed, the Ethiopian troops oriented their efforts toward the main body. They then decisively engaged Arimondi's brigade and successfully seized objectives in the rear of Ellena's reserve brigade. In fact, the Ethiopian army's intent was to seal off the whole Italian army and prevent it from withdrawing to Enticho, Adigrat, and Akele Guzay. One by one, all of the Italian brigades were destroyed; Dabormida's brigade was the last to face the "*furia ethiopiana*." Around 6 p.m., only the remnants of the four Italian brigades succeeded in withdrawing from the battlefield in a manner far from being orderly. Just before the Ethiopian forces declared victory, Baratieri fled the battlefield. The commander of the Italian army was later brought to trial by the Italian government "... for having abandoned his command from 12:30 p.m. on 1 March until 9 a.m. on 3 March (i.e. during the retreat) and having thus omitted to give orders, or take measures, such as the circumstances required," according to Berkeley.

Italian officers pose for a photograph. Eight of those pictured were killed during the Battle of Adwa.

There are many historical accounts of the battle's toll. According to two of the most reliable, around 6,500 Italians soldiers were killed or wounded and 2,500 taken prisoner for the first, and 7,560 were killed or wounded and 1,865 taken prisoner for the second. Meanwhile, the Ethiopians suffered almost 7,000 killed and 10,000 wounded. As a result of this bloody battle, Italy recognized independence of Ethiopia and revised her East Africa extension plans.

A close look at the role played by the Tigrayan component of the Ethiopian army gives a clear insight to how the Ethiopians used the two forms of maneuver — envelopment and frontal attack — to destroy Albertone's brigade. As a reminder, the Ethiopian offensive was, overall, a typical spoiling attack. According to the FM 3-0, *Operations*, offensive operations are conducted to defeat and destroy enemy forces and seize terrain. They can be launched from defensive positions. There are four types of offensive operations: movement to contact, attack, pursuit, and exploitation. An attack — hasty or deliberate — can have a special purpose; the six doctrinal special purpose attacks are: ambush, spoiling attack, counterattack, raid, feint, and demonstration. FM 1-02, *Operational Terms and Graphics*, defines "spoiling attack" as "a tactical maneuver employed to seriously impair a hostile attack while the enemy is in the process of forming or assembling for an attack." This clearly validates the spoiling nature of the attack launched by the Ethiopian army on a poorly deployed enemy in the early hours of 1 March 1896, with the Tigrayan army being the first to engage the Italians.

Many accounts established the decided doctrinal inclination of the Ethiopian imperial army towards a specific form of pincer movement; they called it *afena* and achieved it from a half-moon formation during their offensive operations.

According to Milkias, "When they encounter a battalion or large body of an invading Army, they employed *afena*, the poor man's blitzkrieg. In *afena*, the Ethiopian fighters surrounded the enemy and advanced towards the center, using whatever cover was available for them. Encirclement was conducted with Fitawrari's troops dividing into two and making a detour around the flanks of the invaders. The army would then go to direct attack from every side ..."

There are five doctrinal forms of maneuver: turning movement, penetration, infiltration, envelopment and frontal attack. Only the two latter apply to this case study. The term "envelopment" is defined as "a form of maneuver in which an attacking force seeks to avoid the principal enemy defenses by seizing objectives to the enemy rear to destroy the enemy in its current positions. At the tactical level,

envelopments focus on seizing terrain, destroying specific enemy forces, and interdicting enemy withdrawal routes" (FM 1-02). By using *afena,* the Tigrayan Army and the supportive Ethiopian forces succeeded in destroying each and every battalion of Albertone's brigade. The lateral movement of Ras Alula's and Ras Mengesha's fighters associated with a withdrawal denial establishes a strong and obvious link between the Ethiopian *afena* and a classic and doctrinal envelopment. The slight discrepancy is that the *afena* commanded to use a divertive force in the central portion of the half-moon formation instead of "avoiding the principal enemy defenses."

This diversion was critical to allowing the lateral elements, mainly the cavalry, to slide, encircle the enemy, and crush his flanks; and in fact, this associated maneuver, in light of modern war theory, is a frontal attack. As stated in the FM 3-90, *Tactics*, "a frontal attack is a form of maneuver in which an attacking force seeks to destroy a weaker enemy force or fix a larger enemy force in place over a broad front." Given the ratio of forces — more than 15,000 Ethiopians versus 4,092 Italians — the Tigrayan army used its overwhelming combat power to strike directly his weaker enemy in his positions, prior to the envelopment achievement.

All in all, the Ethiopian's form of maneuver called *afena*, a variant of pincer movement, was effective and decisive in the overwhelming and glorious victory achieved by Emperor Menelik II and his Ethiopian troops at the Battle of Adwa. By applying this subtle combination of two forms of maneuver — envelopment and frontal attack — the Tigrayan army led by Ras Alula annihilated Albertone's brigade and called for further destruction of the Italian army. This resounding success propelled the Ethiopian empire into the league of independent nations and later served as a compass for many anti-colonialists and pan-Africanists in the quest of their identity.

1LT ALI OROU Sourou Abdel-Aziz of the Republic of Benin Armed Forces recently graduated from the U.S. Army Maneuver Captains Career Course (Class 3-10 [2010]) at Fort Benning, Ga.

9 AS 1

PART II: BUILDING TEAMS AND STRENGTHENING SOLDIER RESILIENCE AND UNIT PERFORMANCE

MG ROBERT B. BROWN
LTC GREG BURBELO

Soldiers with the 5th Battalion, 20th Infantry Regiment take part in a live-fire exercise at the Kirkush Military Training Base in Iraq's Diyala Province on 27 June 2010.
Photo by PO2 Ted Green, USN

"An Army is a team. It lives, sleeps, eats, and fights as a team."
— **GEN George S. Patton**

The last 10 years of war have reiterated the age-old adage that war is the most rigorous and demanding of all human endeavors. The greatest asset of the U.S. Army is the American Soldier. The Army's, and subsequently, our nation's success hinges on the ability of our leaders to build effective teams and the resiliency of our Soldiers. The human dimension is therefore critical as we strengthen our Army.

Photo by SSgt Brian Ferguson, USAF

Soldiers with the Zabul Provincial Reconstruction Team move to a canal project site on 14 June 2011.

The operational tempo over the last 10 years, short dwell times, and turbulent manning have combined to create a challenge for units to effectively build teams. Exacerbated by the combat losses units face in Afghanistan and Iraq, it is all the more important to make time to build the strength and foundation of the unit as a team prior to deploying. It is false to assume that since we are part of the Army and a unit there will be an effortless melding of a team prior to deployment. Although training together is part of team building, research has shown there are benefits to using a process to solidify a unit as a team, empower subordinates, and truly get to mission command through team building. In an effort to emphasize team building and resilience, this article lays the ground work for education and a way to build teams of resilient Soldiers.

Building and Maintaining Cohesive Teams

It is intuitive for most that focusing on building a cohesive team leads to a more successful group dynamic. In the 2010 *Military Medicine* article "Social Fitness," authors Ian Coulter, CPT Paul Lester and LTC Jeffrey Yarvis wrote, "We know that service members in deeply stressful situations can often make it through successfully, as long as they belong to socially cohesive groups and as long as those with authority over them (who are supposed to be 'on their side') do not betray them." Due to the high risk nature of Army combat unit missions, it is all the more imperative that leaders focus on building strong foundations of trust, cohesion, empowerment, and mission command. The highly decentralized nature of modern warfare and the modern fog of war require an environment of highly trained, cohesive teams.

Albert V. Carron, Lawrence R. Brawley and W. Neil Widmeyer define cohesion as a "dynamic process that is reflected in the tendency of a group to stick together and remain united in the pursuit of its instrumental objectives and/or for the satisfaction of member needs." According to Psychologist Robert J. MacCoun, two types of cohesion exist: social cohesion and task cohesion. "Social cohesion refers to the nature and quality of the emotional bonds of friendship, liking, caring, and closeness among group members. Task cohesion refers to the shared commitment among members to achieving a goal that requires the collective efforts of

the group," wrote MacCoun. These are critical aspects for leaders to consider when building a military team. Teams are built on the simple concepts of mutual trust, a shared vision, and a team identity. Duke University basketball coach Mike Krzyzewski amplified this in his simple but powerful statement: "People want to be on a team. They want to be part of something bigger than themselves."

The team-building process assists units and groups to further develop and maintain cohesion and create an atmosphere that capitalizes on each member's unique talents and abilities. Penn State University Professor Dave Yukelson developed a list of characteristics of great teams, which include:

"1) Shared vision and unity of purpose;
2) Pride in organization and team identity;
3) Meaningful and inspiring mission;
4) Complementary roles and synergistic teamwork;
5) Individual and mutual accountability;
6) Internal leadership, peer/social support; and
7) Open, honest, and ongoing communication."

Fort Benning's new Comprehensive Soldier Fitness-Performance and Resilience Enhancement Program (CSF-PREP) offers a team-building exercise that is not only used throughout the Army but also used extensively in industry as a method for laying the ground work for building teams. It is founded on the concept of creating a shared vision through a collaborative 360-degree process, which includes input from across all levels of the organization. This process can be performed at any level from squad, platoon, company, battalion, and brigade, etc.

The team builder is known as the "Great Teams Exercise." Regardless of level, leaders need to pull subordinate leaders together for a half-day exercise. By involving the entire leadership, it will allow the commander to establish immediate "buy-in" and allow a holistic development of the vision for the team supporting empowerment and mission command from the beginning, as

opposed to dictating top-down vision. The task/purpose of the exercise is to develop a team philosophy and purpose in order to enhance cohesion and organizational performance. It is conducted in two phases. Phase I consists of five steps:

1) Discuss each individual subordinate member great team story and the defining characteristic which made that team so special.

2) As a group, identify and vote on three to five traits from step 1 that apply to your unit/team.

3) As small groups, identify several appropriate behavioral indicators and attitude/belief statements for each great team characteristic.

4) Build a team creed with picture and motto and present to the group for approval.

5) Establish each individual's commitment within the group to the newly established organizational creed/vision.

Phase II, consists of the sixth and final step:

6) Print the team creed posters and personal copies for each section. These posters and cards should be distributed throughout the unit and posted in the dining facilities, motor pools, barracks, command posts, and headquarters. Throughout the unit's deployment process into theater, the Soldiers should be greeted throughout the movement to Kuwait and into country with the creed posted around for all to see and reinforced by the chain of command throughout the deployment.

Once the team is built, it is maintained through continued empowerment of junior leaders within the organization. This empowerment leads to "buy-in" from the team members and fosters a climate of initiative. Leaders should lead by example and maintain a positive, "glass is half-full" attitude which further enables the Soldiers to truly enjoy their jobs and have fun. The entire team is held accountable for their actions as individuals, but also as teammates so that all of the Soldiers can truly understand the second and third order effects of their actions on the team as a whole. The unit creed serves as a living document similar to the powerful effect of the Soldiers, NCO or Ranger Creeds. The team's confidence will grow, the unity within the team will grow, and the Soldiers will become more agile and adaptive as they mature within the team. The unit is further empowered and can manage the multiple transitions that happen over and over again on the modern, contemporary battlefield.

Cognitive Skills Development Through CSF-PREP

"The purpose of fighting is to win. There is no possible victory in defense. The sword is more important than the shield and skill is more important than either. The final weapon is the brain ... All else is supplemental."

— John Steinbeck

Achieving overmatch will also require a paradigm shift in embracing key aspects within the human dimension focused on training squad member's cognitive development, specifically leveraging capabilities to enhance psychological fitness. Psychological fitness was recently defined in *Military Medicine* as "the integration and optimization of mental, emotional and behavioral abilities and capacities to optimize performance and strengthen the resilience of warfighters." To advance the 9 as 1 concept, and to create squads into high performing "Olympic-caliber" teams that can operate comfortably in a volatile and uncertain environment, may require leveraging the emerging and promising non-material capabilities of the CSF-PREP.

"Chance favors a prepared mind."
— Louis Pasteur

In recent years, Olympic and professional sports teams and coaches have turned to and sought after an advantage in beating the odds of a "fair fight" on the playing fields through deliberate training efforts to achieve their team's mental "edge." These mental edge programs are now common practice in multiple professions and are permanent capabilities at Olympic training centers. Existing evidenced -based research on mental skills training also confirms small but significant positive effects, which is congruent with the concept of gaining an edge. So, too, should our squads of "tactical athletes" be collectively trained to achieve this important X-factor, especially when the stakes are strategic and the consequences are often permanent. The fields of neuroscience, sports and performance psychology, and health psychology all show that psychological fitness underlies and significantly influences every facet of human performance from the execution of simple motor tasks to complex decision-making skills. In addition, the critical attributes of leader development which include confidence, composure, focus/attention control, resilience, and most importantly, the Warrior Ethos, are similar psychological constructs that can also best describe a high-performing squad. CSF-PREP provides an explicit mental strength education and training program that assists Soldiers and leaders in learning how to use their minds most effectively, i.e. "how to think" versus "what to think." CSF-PREP

Figure 1 — Proof of Principle: 198th ITB Case Study

Initial Program Evaluation of Objective Measures comparing Historic Brigade One Station Unit Training (OSUT) Company Averages with Companies that Implemented CSF-PREPs Mental Skills Training

Fort Benning, Home of the MCoE

Who: 198th ITB One Station Unit Training (OSUT)
What: CSF-PREP Mobile Training Teams and Support
When: 1st Cycle, AUG 2010 and 2nd Cycle, JAN 2011
Where: Fort Benning, GA
Why: Enhance Performance & Resilience of Warfighter

* Data provided and approved by 2-19IN CO

Figure 2 — Mental Skills Foundations

mental skills training helps close the leader development gap of the "how" in accelerating and operationalizing these essential attributes, which are critical for a squad to collectively perform to its upper range of potential.

Proof of Principle: 198th ITB Case Study

Figure 1 represents data from CSF-PREP implementation of mental skills training with 198th Infantry Training Brigade (ITB), specifically 2nd Battalion, 19th Infantry Regiment. The unit supplied historic One Station Unit Training (OSUT) company averages, assuming unit size of 200 Soldiers, and compared performance on tasks that focused on mental skills training. It is important to note that both companies represented performed at this historic OSUT company average prior to implementing CSF-PREP. The 1st cycle mobile training team (MTT) was conducted in August 2010 as part of a MTT comprised of two performance enhancement specialists (PES), trainers that applied a train-the-trainer approach to mental skills development. Over two days of training, company leadership and staff (consisting primarily of drill sergeants) were supplied in-depth training on the Performance Enhancement Model and the Personal Performance Plan to be applied to OSUT tasks. The PREP trainers worked with staff to create seven mental skill lessons to be taught to trainees and also ways to reinforce and generalize mental skills across tasks and to training in the field. The unit attributed the performance increases in weapons qualification and the Army Physical Fitness Test (APFT) to the mental strength development in the lesson plans and continuous reinforcement by drill sergeants. The unit considered the attrition rate decrease to be a positive by-product of mental toughness training that improved motivation and confidence, leading to a decrease in voluntary withdrawals (refusal to train). A highlight not reflected in the graph was the breaking of the battalion record on number of 300s on the AFPT (highest point value achievable on 300 point scale). It previously held at 17 and nearly doubled to 33.

The 2nd cycle MTT in January 2011 provided more in-depth training and focused on the same company as cycle 1 in order to replicate data. The cycle also added a second company to ensure that results could be generalized. CSF-PREP trainers and the company commander adjusted the lessons and approach based on lessons learned. For Company 1, drill sergeants took on the majority of teaching and reinforcing with support by leadership. These positive results were also attributed to the trainees' personalization of mental skills and the drill sergeants' teaching approach as one of mentorship and coaching. Company 1, duplicated their APFT record of 300s with 33 and slightly improved their average. They also improved their average in qualification

and attrition rate, showing not only a replication but an improvement of their extraordinary results. Company 2 showed a substantial increase in its APFT average and number of 300s, surpassing the old battalion record of 17, as well as a huge increase in qualification average and number of experts. Their retention rate was also a highlight and showed that continued by-product of CSF-PREP training.

Conclusion

"It profits an Army nothing to build the body of a Soldier to a gladiatorial physique, if he continues to think with the brain of a malingerer."

— SLA Marshall

Raising the bar of performance across the squad, while closing the gap in the performance differences between each squad member's capabilities, will require a more collectively elite mindset than the thought that "the squad is only as good as our weakest Soldier." Beyond the necessary requirements for team building and resilience training, CSF-PREP offers an education, acquisition and application model of training using evidenced-based, best practices in teaching mental skills for harnessing the warrior mindset. The training model includes a foundation of understanding the psychological aspects of elite performance, building confidence, attention control, energy management, visualization/imagery, and most importantly, goal setting. These mental skill tactics, techniques, and procedures (TTPs) are interrelated when applied and are designed to enhance Soldier's physical and cognitive performance, self-awareness and self-regulation, which are key ingredients for empowerment and initiative. Educating and training squads collectively in a tailored, relevant mental skills package may have a synergistic effect of creating a more mature, elite, and cohesive squad mindset — an essential combat enabler for achieving excellence and winning tip of the spear, lethal and non-lethal actions of the 21st century.

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MAAWS:

GETTING THE BIGGEST 'BANG' FOR YOUR BUCK

CPT DANIEL PLUMB

Prior to emplacing a weapon system, a disciplined Soldier will first establish proper conditions by setting up sectors and aiming stakes, clearing sectors of fire, and creating a range card. When targets appear, the Soldier will engage the greatest threat first, adhering to fire controls in order to ensure maximum effectiveness of available ammunition. If the Soldier is undisciplined in his control of fire, ammunition will be wasted, the enemy will suffer minimal effects, and stray rounds may harm adjacent units. This is why establishing proper conditions and sectors of fire, carefully controlling ammunition, and maintaining disciplined patience are paramount in the effective execution of any weapon system. Money as a Weapon System (MAAWS) is aptly named because it describes how money should be utilized much like a weapon system. Funds should be used to "engage" the local population only when local conditions are set properly and money handlers understand their responsibilities. Otherwise, money will be wasted, and there may be severe and unexpected side effects.

MAAWS describes the art of careful and deliberate spending in order to achieve the greatest counterinsurgency (COIN) effect in a unit's area of responsibility (AOR) while simultaneously conserving funds for future operations. While deployed, commanders and their subordinate purchasing officers and paying agents take on the responsibility of numerous sums of money that are used to improve friendly fortifications, provide supplies for Afghan National Security Forces (ANSF), and shape the operating environment through civil development projects. MAAWS pertains specifically to the Commander's Emergency Response Program (CERP), which is "designed to enable commanders to respond to urgent humanitarian relief and reconstruction requirements within their AOR by carrying out programs that will immediately assist the indigenous population," according to United States Forces-Afghanistan (USFOR-A) Publication 1-06, *Money as a Weapon System-Afghanistan*. CERP funds can be used in many different ways (see the CERP manual for a complete description) but are best applied in local projects aimed at improving sewer, water, electricity, academic, trash, medical, and security (SWEAT-MS) conditions of a unit's particular AOR.

From September to October 2010, Soldiers of the 1st Battalion, 502nd Infantry Regiment of the 2nd Brigade Combat Team, 101st Airborne Division (Air Assault), conducted Operation Tund Baad as part of the larger Operation Dragon Strike. This ANSF-partnered and joint forces action took place in the volatile Kandahar district of Regional Command (RC) South and resulted in the successful clearance of a large area of enemy occupied territory south of Highway 1. Part of the operation included establishing a combat outpost (COP) in the strategically located village of Kandalay. This outpost, later dubbed COP Kandalay, was constructed in record time and occupied by Delta Company, 1-502nd IN. Prior to the Tund Baad clearance, Taliban forces had enjoyed freedom of maneuver in and around Kandalay due to limited International Security Assistance Force (ISAF) presence. Once complete, the

COP was met with immediate resistance from Taliban fighters and suffered regular improvised explosive device (IED) and grenade attacks. In December 2010, my platoon (1st Platoon, Delta Company, 1-502nd IN) began aggressive CERP operations in Kandalay. Our goal was to improve all aspects of life within the village and ultimately win the support of the local population in order to drive a wedge between the Taliban and the people. The following is a reflection on the lessons I learned while implementing MAAWS in the village of Kandalay over the course of seven months.

NOTE: USFOR-A Publication 1-06 is the official MAAWS-A publication used in Afghanistan and outlines the specific regulations for legal CERP usage. This article is not meant to supersede its directions but rather to provide insight into the practical application of strategic CERP spending with a MAAWS state of mind.

Proper Spending

The most common misperception about MAAWS and CERP in general is the notion that money spent means forward progress. Units that track the success of their CERP programs solely in dollar amounts fail to understand what, if anything, their spending efforts are actually accomplishing. For example, it is possible for spending in an area to cause irreparable harm to the local economy and/or establish unnatural societal norms. A sudden influx of CERP money has the potential to disrupt the economic balance, leading to collapse and subsequent power vacuum. If leaders press their subordinate units to aggressively spend without first establishing criteria for the measurement of actual progress, money will be wasted. Remember that most societies in Afghanistan (whether they be a village, district, or larger) have prospered for decades before ISAF's presence. Leaders must thoroughly understand the social and economic dynamics of their battlespace before spending in order to prevent the misuse of funds. Furthermore, the success of the CERP program should not be measured by the number of completed projects alone. When the MAAWS principles are applied, the main objective of CERP spending is to sway public support in favor of the unit, not to simply produce infrastructure. As such, units should focus their efforts on the psychological impacts of spending. Consider the following equation:

> *The most common misperception about MAAWS and CERP in general is the notion that money spent means forward progress. Units that track the success of their CERP programs solely in dollar amounts fail to understand what, if anything, their spending efforts are actually accomplishing.*

COIN Effect of Spending = Proper Conditions x Diversity of Projects x Local Labor and Resources Used

This equation is the result of several months of trial and error and as such should be carefully considered by any unit seeking to conduct projects of their own. During our first few months in Kandalay, we attempted to approach projects from many different angles and measured our success by conducting polls within the village to determine how many people knew about a specific project and viewed it positively. At first we hired outside contractors, mainly from Kandahar City, to provide all of the labor and supplies. This was appealing to us because contractors typically speak English, bring their own equipment, and work quickly. Projects were usually completed within days of calling the contractor, and we as a unit were able to send positive progress reports to higher. Before long, all of the companies in the battalion were doing the same and a veritable "arms race" of projects broke out. Though not officially recognized, the companies began competing to see who could spend the most money and complete the most projects each month. Eventually, the battalion shifted its focus towards local labor. The idea was that if a village's military-aged males are working all day then they will be less likely to cooperate with the Taliban or need them as a source of income. The mass hiring of locals to conduct projects became known as Cash for Work (CFW).

The first thing I did when we began our own CFW program in Kandalay was to designate a respected member of the village as project manager. He was nominated by the elders, had a background in the Afghan National Police (ANP), and was very cooperative. I spent many hours talking to this man and what he revealed was surprising: many of the contracted

projects we had conducted were not well received by the population. The people were angry that we had brought outsiders into the town to do work they were capable and willing to do themselves and most of the projects were simply unnecessary or unwanted. He also told me that I had been paying almost double the market price for most of the resources used. We as a unit had fallen prey to the projects arms race; conducting projects purely to gain favor in the eyes of our chain of command and not as a means to improve the lives of the people in our village. We had spent thousands of CERP dollars without achieving any real gains. Over time, I developed the COIN effect equation upon which I based all future projects and spending efforts. The following is a description of each part of the equation along with practical application tips and examples.

Proper Conditions

The first step is to set proper conditions for the project's process. A unit can accomplish this by showing their goal is to improve quality of life by displaying a genuine concern for the well-being of the local population. Spending money on projects will have the intended impact only when the people fully understand why the unit is spending. This can only be accomplished through frequent interactions with the local population where a proper COIN tone and stance is displayed by every member of the unit (see FM 3-24, *Counterinsurgency*). Over time, the locals will learn to trust that the unit has the village's best interest in mind. Soldiers must be coached and put into situations where they can feel comfortable interacting with locals in a non-threatening manner. This will allow the locals to get to know the faces of Soldiers and will lead to a more relaxed attitude towards the unit as a whole. The more a population learns to trust in Soldiers, the more their local leadership will actively participate at shuras (or other townhall-style meetings) sponsored by the unit. Ultimately, they will be more likely to support the project process. While in Kandalay, I ensured that my platoon had several hours of casual exposure to the population each day. I accomplished this by conducting a daily roll call where all laborers were thoroughly searched and then brought into a secure area of our COP prior to beginning work each day. During this time my Soldiers were able to interact with

the locals in a relaxed manner, oftentimes sharing tea or playing games with the children. At the same time, I sat with the work leaders and discussed the details of the day's activities, reviewed a roll-call sheet, and made small talk about the weather, family life, etc. This became routine; every day for months the workers came into the COP, interacted with the Soldiers and me, and then left to conduct work. By the end of our time in Kandalay, the Soldiers in my platoon knew almost every local by face and name, and the children had nicknames for us all.

Every move a unit makes has far-reaching secondary effects. Locals talk, news travels fast, and bad news travels even faster. Having a close relationship with the population gives the unit a buffer — or more specifically — a benefit of the doubt. When my company conducted kinetic operations in or around the town, the workers were always very eager to ask questions at roll call the next morning. This afforded the perfect opportunity to give them the facts before rumors could take hold. If the people do not understand why a unit does something, they will not have the desired response and the end result may be contrary to the intent. Spending money without first ensuring public buy-in and understanding can also have negative effects, especially when the projects focus on small-scale, single-family projects. Spending of this variety has the potential to evoke jealousy and can even cause or strengthen conflicts between neighbors. In addition, if the enemy sees that one family or group is getting more attention than another, they are likely to accuse that group of spying or committing some other act that has made them seemingly deserving of the unit's favor. This may result in kidnapping, murders, and intimidation, which will set the unit back in their COIN efforts.

One of the first difficulties units face is getting the local population to believe in the project. This means simply coaching them to understand what they can do to improve the place they live and, more importantly, that they have the ability to do so. Most

A Soldier from the 1st Battalion, 502nd Infantry Regiment discusses details of the day's activities with local workers during a daily roll call.

villages have existed for hundreds of years, and in that time, very little has changed. The people likely maintain their own property but rarely think of how the village as a whole can be improved or how doing so will help them as individuals. Public services are not common in many underdeveloped societies and are likely seen as a luxury reserved only for the upper class living in cities. They must come to understand that the project process will not only improve the infrastructure of the village, but also lead to greater prosperity and independence for its citizens. One of the most glaring examples of this concept that I experienced centered on our trash and sewage disposal projects. Prior to these projects, the locals simply threw their garbage on the ground and let sewage flow into the streets. I proposed that a drainage system be built to channel all sewage into a nearby canal and that laborers should collect garbage from the streets. My proposition was met with bewilderment. The people of Kandalay had no idea that the sewage and garbage in their streets was contributing to the mosquito and rat infestation that had been plaguing them for decades. After a brief explanation on the matter, the people were eager to begin the projects.

At first, locals may be skeptical about the unit's overwhelming generosity. They may secretly feel the unit is only offering to help because it wants something in return. While this is true in many aspects (projects ultimately lead to increased support for the unit, leading to improved security in the AOR), the unit must make every effort to avoid asking for anything in return. Support from the people will follow if the unit portrays a continuous show of genuine concern for the well-being of the citizens. One technique that I found to be highly effective is the avoidance of credit. The unit should attempt to remove itself from the project process as much as possible and even disseminate IO (information operations) to the people where local leaders are given as much credit as possible. For example, if the project is to build an irrigation system for crops, the unit will ultimately be involved in many efforts including acquisition of resources, local security, and cash payments. However, the unit should task its patrolling platoons to inform as many people as possible about how the local leaders were involved with nominating and managing the project and how those actions will ultimately benefit everyone in the village. If possible, projects should be named after the leader who is "in charge" when spreading awareness of projects. Patrols should say things like, "Did you hear about the (elder or project leader's name) irrigation project? He nominated it at the local shura and is carefully managing the project because he wants the next harvest to be good for everyone in the village."

Building up the public image of a local leader will have two powerful impacts. First, it will empower the selected leader, so units must be very careful who they choose; he may potentially become a useful ally if he is not already loyal to negative influencers. Village elders are an easy choice, but if they are not productive or are corrupt, another candidate must be chosen who better represents the needs of the majority. Second, the selected leader will likely feel socially obligated to perform up to the expectations of the people and the unit. All accomplishments and signs of initiative must be widely publicized and celebrated by the unit in front of the people. The unit must strive to be as invisible as possible in all ways except in giving recognition to others. This will encourage those who remain skeptical about the unit's intentions to contribute. Finally, the empowered leader may come under threat by groups who do not support the project. The unit

must make every effort to ensure the safety of its selected leaders; failure to do so may negate the entire process and even set the unit back in terms of public relations and support.

In the best case scenario, the people themselves will nominate a project and provide their own labor and/or resources. In this scenario, the unit is only necessary to assist the momentum. Shuras provide the unit with an excellent opportunity to talk to the townspeople and find out what they need by order of precedence. Once a project is identified, the unit should do as much as possible to stay out of the execution except for supervision, funding, and inspection. This will lead to buy-in and further positive effects.

Diversity in Projects

Villages have many different people, and as such, many different needs. Units that offer a variety of projects will be able to affect a larger portion of the population than those who focus all resources on few large-scale projects. SWEAT-MS should be at the core of a unit's spending agenda but not its sole focus. A unit must talk to the people of its AOR, find out what they need, and assist accordingly. Every person in the village can benefit from some form of project. The challenge is identifying projects that affect the largest number of people without focusing too much on single individuals or groups. One effective technique is to build on existing businesses and skill sets through the use of the micro-grant function of CERP. "The micro-grant program expands the flexibility of CERP and authorizes commanders to provide cash, equipment, tools, or other material support (in-kind contributions preferred) to small businesses that lack available credit or financial resources. Micro-grants must be used with strict disciplinary measures in place to ensure the economic development objectives of the command are being advanced. The intent of the program is to increase economic activity, particularly in areas where small businesses have suffered because of insurgent or sectarian violence" (USFOR-A Publication 1-06).

Micro-grants are a highly effective means for improving the local economy, but as mentioned, only when the unit ensures their money will be used effectively. A good starting point is to search for locals who have pre-existing skill sets that will most assist the needs of the village. For example,

Local workers dig a sewage system in the village of Kandalay in Afghanistan.

if the supply of water is a main concern, the unit should seek out individuals who have knowledge or experience in well drilling. If there is a great need for the construction of infrastructure, the unit should seek masons or other skilled laborers. This will help keep all money spent inside the village and thus maximize the effect on the village as a whole. Keep in mind that simply administering micro-grants does not ensure positive results. The unit must carefully interview prospective recipients and agree upon contracts explaining how the money will be spent. This should be conducted as discretely as possible to prevent jealousy or other conflicts within the village. Once a grant recipient is selected, control measures must be enforced to prevent inappropriate use of funds and to ensure the business's short-term output meets the unit's goals. Furthermore, micro-grants should only be given in several small payments over time when certain criteria are met.

In Kandalay, I decided to administer a micro-grant to a local tailor. He came to me during roll call one morning saying that he preferred not to do manual labor but offered his tailoring services as a possible job. The tailor and I agreed on terms, and I administered the micro-grant over a period of several weeks. The first payment was for the procurement of a sewing machine. Once the tailor produced a receipt proving he had purchased the machine, I made a second payment for tailoring materials.

This continued for all necessary supplies until he had everything necessary to begin full-scale operation. Throughout the grant payment timeline, I went on patrols to his home and business location to check on security as well as ensure the grant money was being properly used. In any micro-grant situation, the unit must take special care to ensure that they are not seen as overly involved with the grant recipient. My patrols only stopped at the tailor shop after visiting many other businesses and homes throughout the village. This helped prevent the tailor from gaining too much negative attention from those who might have been upset by his cooperation with my platoon. Ideally, locals should only see that the micro-grant recipient has come into some money and has chosen to improve his business. This will help ensure the long-term prosperity of both the business and its owner.

Keep in mind, the ultimate goal of strategic spending is not simply the spending of money or administering of grants but rather the resulting COIN effect. Leaders in the unit must have a thorough understanding of the social dynamics of the village and figure out how to best alter or support those dynamics through projects and grants. No two villages are the same, but micro-grants that are applied to businesses that have the potential to assist in a public needs (food, shelter, clothing, water, etc.) can be applied to a grander

political scheme aimed at increasing support for those local leaders who positively support the unit. In my experiences, most people will quickly abandon their political ideologies when these things are on the line.

Part of my agreement with the tailor was for him to donate a portion of his wares to a local mosque each month. These clothes were then to be distributed free of charge to the poorest citizens of Kandalay by the mosque's mullah. I strategically selected this mosque because I had learned that its mullah supported the Taliban and actively spoke out against my platoon's projects. The first months went as planned, and my patrols started seeing numerous people around the village who were usually very dirty wearing new clothes. A few months later during roll call, my workers disclosed that the mullah had literally been run out of town. Apparently, he had been selling the clothes for his own personal gain; the people found out and were very upset. The corrupt mullah was replaced by an individual that the villagers themselves nominated, and he was very supportive of my platoon and our projects. As a result, attendance at the mosque swelled, and we enjoyed a long period of high public support.

The main takeaway from this story is that units should not only strive to increase their popular support among the locals through positive actions and deeds but also through indirect means. I knew the mullah was counterproductive to my efforts in the village due to his support for the Taliban but was unable to oust him myself. I set him up for failure through the clothing project because I had hoped he would abuse the power and thus lose the respect of his followers. More importantly, my hand in the matter was invisible — the mullah was responsible for his own downfall. If my clothing operation had been more overt, I doubt the end result would have been the same. When I left Kandalay, the tailor project had provided more than 100 sets of clothing (pants and shirt) to the poor. Several months later I identified a female tailor, and we came to a similar agreement. Her efforts provided an additional 60 sets of women's clothing to the town, and she was able to open a store. I also employed her to teach several young girls the art of sewing and tailoring, thus providing them with a useful skill set that will benefit them throughout their lives.

Local Labor

The majority of projects that involve construction or unskilled labor can be executed almost entirely by the locals themselves. Units should strive to promote projects that draw overwhelming community support by capitalizing on public need. I drew the majority of my labor from the previously mentioned CFW initiative. In the beginning, I employed around 30 to 60 workers each week. Towards the end of my time in Kandalay, I had more than 1,200 workers completing dozens of projects around the town and in the local fields. For more complex projects, the unit should seek to hire the services of skilled personnel (such as masons, architects, etc.) but use the locals for the majority of the manual labor. The more the locals participate in the project, the more likely they will be to take pride in their

work and see the project to completion. Furthermore, local labor provides an opportunity for the unit to stimulate the local economy and gives the people an opportunity to learn useful skill sets. A mason who is hired to oversee the finer details of a construction project can also be employed to teach his trade to those willing to listen. If the people of a village have something to do (especially something they see as constructive that pays well), they will be less likely to support any action that would threaten their situation. The most successful projects are those that the people not only participate in and support but also protect. For a time, COP Kandalay suffered regular hand-grenade attacks where one or more individuals would throw a grenade over our wall and then run away before being seen. None of the Soldiers in my company were injured, but the attacks were damaging to our credibility and served as a continual annoyance. I knew that the solution was within the people themselves; all that was needed was to motivate them to seek out and stop the grenade throwers. One morning at roll call I announced that CFW would no longer be conducted due to the risk of grenade attacks. There was an immediate uproar and I assured the crowd that we would continue work once the grenade throwers were found and brought before me. Within a few days, I was given the name of the main perpetrator and also informed that he had recently been detained by another platoon in the company and sent to the district center for questioning. He was due for release later that week. I immediately called the district center to inform them of the situation and had my work leaders prepare several supporting sworn statements. The grenade thrower was prosecuted and sent to a prison in Kandahar City, and we began CFW once again.

Once a project is nominated, a project leader is identified and money is allocated for the acquisition of resources, the unit should develop a local labor plan. Referring again to the COIN effect equation, the most effective projects are those that maximize the amount of local labor utilized. In the majority of villages, the most prominent public need will likely be a source of steady and reliable income. Regardless of how the people feel about the unit, they will likely want to participate in a project that guarantees them regular payment. However, they will be even more likely to participate in a project that produces something that is overwhelmingly desired. In February 2011, my company held a shura at our outpost where elders expressed a desire to have my workers refurbish a local mosque.

Local workers refurbish the mosque in Kandalay.

Soldiers with the 1st Battalion, 502nd Infantry Regiment sort through ID cards that would be handed out to the local workers.

I told them that such a project would take some time and that maximum participation was necessary to ensure its completion.

The first step I took to developing the mosque labor plan was to spread awareness about the project among the local population. I tasked my patrols to spread information about the project to as many people as possible and to emphasize the fact that all those who work will be paid. The prospect of easy money drew immediate interest as did the popularity of the project. We did not use any posters to advertise the project, but this is an effective technique. Simple fliers that do not require literacy to understand, such as a picture of a person working and getting paid by a Soldier, are a good way to spread awareness to a wider audience.

The second step I took was to instate a thorough worker integration plan. Prior to beginning the labor portion of any project, units must record detailed information about all prospective participants, prepare a pay schedule that tracks days worked by individuals, and ensure all workers understand the terms of their employment. Photos should be taken of each worker and paired with collected information for future use. If the unit has adequate resources, simple identification cards with photo and basic information should be created for every worker. ID cards help the Soldiers to learn names quickly and prevent payday fraud where one local pretends to be another. Screening and photos must be conducted in a secure location where the locals, and more importantly, the Soldiers can feel safe and comfortable. A secure location also mitigates the possibility of intimidation attacks which can quickly end interest in a project. Combat outposts or other locations that have standing guards, high walls, and a secure perimeter are ideal locations for screening and ID card distribution. All new workers who join the

project at a later date should be processed in the same manner. My platoon created picture identification cards for all the workers and fastened them with 550-chord so they could be worn around the neck. ID cards were distributed every morning when that person's name was called from the roll-call list and then collected at the end of every day in a similar manner.

The third step I took was to establish a daily work routine that allowed my platoon to:

* Carefully monitor and record who was working every day through daily distribution and collection of ID cards;

* Monitor progress of the project and identify additional required resources;

* Meet with the project leader to discuss any issues; and

* Allow the Soldiers of the unit to spend as much time with the people as possible.

The fourth step was to begin work and monitor progress through daily combat patrols. These patrols allowed me to see the quality of work being conducted as well as provide security for the workers. Workers were required to keep their ID cards throughout the work day and, on request, present them to the patrol for inspection. This helped my unit to track the work ethic of individuals and identify those who were present but not participating in the project. All individuals found in the work area without an ID card were questioned.

The fifth and final step was to organize the work force into regimented labor groups with a system of accountability and managers. Over time, my patrols noticed unofficial leaders within the worker ranks other than my main project manager. These individuals were identified and assigned manager status. When a unit chooses to instate a system of sub-managers, work groups should be organized in a typical military chain of command structure where the project leader is responsible for the managers, and they are responsible for their own workers. Such a system of organization will allow the unit to control the efforts of the entire work force more efficiently. The project leader and managers will have the opportunity to earn extra pay if, and only if, they fulfill a number of daily requirements determined by the unit, which should require them to be accountable for the attendance and productivity of their subordinates. Much like the project leader, the managers will likely become empowered by their new found societal status and must be closely monitored for their own protection. The unit must be deliberate and careful in its choosing of managers. Should the unit come across an intelligent and literate individual, an administrative position may be created. This individual will assist the unit in daily operations such as attendance, ID card distribution, and other daily tasks that may be slowed by the language barrier. However, if no such individual can be found, the Soldiers in the unit should handle all administrative tasks themselves.

Local Resources

Units can make the most of their money by allowing the project leader to do the shopping. Local shops will likely charge the unit several times the actual price of a good or service or may refuse to sell entirely. Allowing the project leader to find and select vendors helps keep costs low by removing visibility of the unit from the buying process. Once the project leader identifies prospective sellers, he should be required to procure several bids. The unit will select a bid, give him the necessary money, and task him with procurement and transportation. Units should attempt to stay out

of the purchasing process as much as possible, unless corruption is suspected. However, for large projects that require sizable payments and coordination, the unit must be thoroughly involved. The CERP handbook will dictate policies and procedures for projects with a large price tag. Project leaders should only be used to procure small items such as tools and building materials.

When purchasing resources, the unit should remember that sometimes the cheapest price may not be the "right price." If possible, the unit should try to keep as much of its money allocated to its own AOR as possible. Priority should be placed on local vendors in order to promote local economic growth and further extend the strategic effect of spending. Senjeray, a town near Kandalay, had a robust market and enjoyed commerce from across the Zahray district. There it was possible to purchase shovels, pick axes, and other hand tools needed in the projects for a very low price. In Kandalay, however, there was a blacksmith who could produce the same goods for a higher price mainly because he created them all himself. Even though his prices were higher, I tried to purchase as many tools from him as possible as a means to keep my CERP dollars inside the Kandalay economy.

The term "resources" referred not only to durable items such as tools, but also to the skill sets and capabilities of the people themselves. Even the most unlikely citizens can often contribute greatly. In early March 2011, two amputees showed up to roll call looking for a job. One man was missing both legs and the other was missing a leg, arm, and all but three fingers on his remaining hand. The legless man wore prosthetics, and the other used a crude crutch. Both had fought against the Russians as Mujahideen and had received their injuries from anti-personnel mines. They lived together in Senjeray and sold flowers for a living. I talked with them for a long time and ultimately determined that they would best serve me by teaching the local children about the dangers of mines. I equipped them with several visual aids and asked that they teach the children how to identify mines and most importantly, not to touch them when found. We agreed that they would teach one class each week, and that each class would be recorded on a cell phone camera to be shown to me at the beginning of each month. I more or less forgot about this project until the two showed up again one month later with a cell phone memory card full of videos. They had taken upon themselves to not only teach the children of Kandalay but also of Senjeray and other villages in the surrounding area. In one video, the legless man is sitting on the ground talking to a large group of gathered children. He speaks about his encounter with a mine and then suddenly removes his prosthetics to prove the severity of his point. I was told that this is how every class began, followed by an instructional block where the children were shown pictures of different mines. When I left Kandalay, the two men had recorded 46 videos from dozens of villages across the Zahray district. My platoon did not benefit strategically from this project, but I like to think that through it the lives of hundreds of children will be saved.

Incorporating Civil Affairs (CA) Teams and Local Governance

Civil affairs teams have the potential to provide the unit with expertise and personnel needed to reach out to the people and identify critical projects. Female engagement teams (FET) and other specially trained groups have the ability to access portions of the population the unit cannot. However, civil affairs can only go where the unit patrols escort them and must deal with the COIN environment that has been established. If the unit has not previously set a COIN-minded, project focused tone with the locals, civil affairs success will be limited. The unit must take the lead in projects and all other forms of development and then solicit civil affairs for assistance. Furthermore, units must have knowledge of what development teams are available and actively seek their services. If none are available, the unit should continue with the project process and seek support and guidance through other means.

In most areas there will be some form of local governance that represents the unit's village as well as numerous other locations. Involvement from local governmental figures in the project process is critical to long-term development in the village and the country as a whole. Units must actively work to gain the attention of leaders and, if possible, encourage them to visit the village as much as possible to check on progress. I decided early on that Kandalay needed a school but recognized the immense financial and political burden that the project would require. After many weeks of consulting with a civil affairs team and individuals working in the district center, I was granted an audience with the district governor and a Kandahar Ministry of Education representative. They came to our outpost and sat in a shura with the elders of Kandalay, and we discussed what would be required to build a school. It took numerous months of negotiations, two more visits by the governor and education representative, and a sizable petition before I was able to finally gain the attention of the Afghan government. At one point, more than 80 men from Kandalay traveled to the district center to demand a school be built. In time, we were able to secure enough funding to begin work. I left Kandalay shortly after land had been allocated for construction but have been told by C Company, 1st Battalion, 87th Infantry Regiment (the unit that replaced mine), that the school is currently being built.

When projects that involve major construction are complete, a ceremony should be organized where local leaders publically acknowledge the work of the village. CERP money can legally be used to organize small ribbon-cutting ceremonies with basic refreshments. This would also be an ideal venue for the project leader and managers to speak directly to their leader about village issues.

Recovering from Critical Incidents

Whenever a military unit conducts long-term operations in the same living environment as civilians, accidents are bound to occur. Even the most COIN-focused units may end up destroying property, causing harm to a civilian, or commit some other action viewed popularly as a grievance during the course of military operations. In situations such as these, the unit's timely response is paramount for the preservation of a long-standing relationship with the people. The more time that passes, the worse the situation will become. Rumors will spread fast; the unit must act quickly to correct information about what really happened and why. While doing so, the unit must also display an immediate and genuine show of not only grief but desire to make the situation right. During roll call one morning, a small child was run over and killed by a vehicle in our outpost's entrance control point (ECP). There was no negligence on the part of the driver; the child had simply ducked under the wheel of the vehicle while it was slowly backing into position. Recognizing the tremendous negative impact this

event might have on my project efforts, I immediately gathered the family of the child as well as all those that had witnessed the event. I conducted an impromptu debrief with the workers by telling them exactly what had happened and showing a display of grief and concern over the loss. I ensured everyone that proper reparations would be made and that measures would be taken to prevent future incidents. I then brought the family of the child into the conference room of our outpost to discuss terms of compensation for the loss. The CERP handbook authorizes condolence payments, but I discovered that the family was not interested in money. The child's father stressed to me that accepting anything tangible for the loss would be a shameful act in the eyes of the other villagers. I realized then that sometimes the most valuable resources are immaterial things. I offered to personally educate the father's remaining sons, ensuring him that after three months they would be able to read and write the Pashtu alphabet as well as several words. At this point the school was planned but was still many months from completion. The concept of education for his boys excited the man and he tearfully accepted. My company then sent a patrol to escort the father to his mosque for discussions with the mullah on funeral preparations and other forms of compensations. Eventually the father agreed to a small payment to help with funeral costs.

For the remainder of my time in Kandalay, I spent an hour each morning teaching basic literacy to the boys, one of whom was deaf. We worked off of a marker board and school books provided to me by the CA team. After the incident, my patrols almost never heard mention of the ECP incident but were frequently asked about the boys that were being educated. Almost everyone in the village wanted to send their children to learn, but I could only accommodate 10 due to limited space. By the time I left Kandalay, my translator and I had taught the boys to read and write the entire alphabet as well as dozens of three- and four-letter words. My company's immediate and genuine response was rewarded by an increase in CFW participation as well as new levels of public support.

Summary

Money has the potential to be a powerful force multiplier and can change the lives of hundreds of people for the better, but only when due diligence is given to proper planning prior to spending. In these times of uncertain and dwindling budgets, commanders at all levels must strive to get the most out of the limited monetary resources they are allocated. Leaders who direct the hasty expenditure of funds simply to meet quotas or remain on par with adjacent units will end up wasting money and having limited positive effects. Adherence across a command to the COIN effect equation will ensure those who oversee spending understand any amount of funds can go a long way if used correctly.

Afghanistan was the primary example in this article, but the principles of MAAWS can be applied in almost any area. Wherever there is a population center needing development, a group of people willing to work, and an organization willing to deliberately plan, fund, and oversee the execution of projects, the COIN effect equation may be applied.

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The author teaches local children how to read and write the Pashtu alphabet.

Training Notes

— THE BATTALION BLENDED TRAINING ENVIRONMENT —

Maximizing the Use of Simulations

LTC JOSEPH M. NOLAN

Creating a battalion training event in a resource-constrained environment requires leaders to think creatively to leverage every possible training aid, device, simulation, and simulator (TADSS). Being able to determine what assets are available, how to best utilize these systems, and how to create a meaningful environment to train Soldiers can appear daunting; however, there are assets available to the commander and S3. The Functional Area 57 (FA57) Simulation Operations officers assigned to both brigade combat team (BCT) and division staffs are specifically trained and educated to integrate live, virtual, constructive, and gaming technologies to create a blended training environment for unit training. FA57s, in conjunction with the installation Mission Command Training Centers (MCTCs) and simulation facilities, provide a critical link for the commander to turn training requirements into technical solutions. Although assigned to the BCT or division, commanders and S3s should leverage FA57s to support development of their battalion-level blended training environment just like any other BCT staff asset. By understanding the capabilities of TADSS and properly integrating them to mutually support each other, battalions can create a single, detailed multi-echelon training event. As an example, the following case details how we created a blended training event with live, virtual, and constructive simulations that trained our entire battalion.

Training Requirements and Resource Constraints

In 2000, while serving as the commander of Headquarters and Headquarters Company (HHC), 1st Battalion, 30th Infantry Regiment (Mechanized), 3rd Heavy Brigade Combat Team, 3rd Infantry Division on Fort Benning, Ga., I had the challenge most HHC commanders face: creating meaningful training for mortar, support, and medical platoons. With the arrival of new Soldiers to the company, our mortar crews required a live-fire certification. In preparation for an upcoming Kosovo deployment, the support platoon leader wanted to conduct convoy training. The medical platoon wanted an opportunity to train their new combat medics on casualty evacuation (CASEVAC) and battalion aid station (BAS) operations. At the same time, the S3 and executive officer (XO) were attempting to put together a command post exercise (CPX) to work through our battalion tactical standard operating procedures and shake out the newly assigned staff officers. Our two Infantry and one Armor company commanders all pressed for a chance to train their new platoon leaders on company mounted-maneuver

operations with Infantry squads. And finally, our battalion surgeon wanted an opportunity to train triage operations with the battalion before deployment.

Based on the available people, time and resources, a field training exercise was not an option. With the battalion's upcoming deployment to Kosovo, people and time constraints forced this event to occur in a single week balancing between block leave and gunnery. Our lean battalion budget restricted operational tempo (OPTEMPO) miles to only support M1 Abrams and M2 Bradley gunnery before deployment. Finally, we had to work all of these training needs with mandatory pre-deployment activities. Exploring different options, the XO, S3, and I put together a plan, with support from the Close Combat Tactical Trainer (CCTT) center staff, which integrated all of these requirements into a single, blended event, bringing together live-fire training with virtual simulators and constructive simulations.

Defining the Task and Level of Fidelity

First, we identified the specific tasks that the commander and S3 wanted to accomplish. By doing so before trying to apply a solution, we prevented the case where we were stuck painting a wall with a hammer. Exploring the primary task and subsequent supporting tasks enabled us to target those events that needed to be performed

A Soldier sits in the commander's station of an M1 Abrams tank Close Combat Tactical Trainer simulator.

live and those that could be accomplished with some sort of TADSS. For example, to certify an 11C mortar Infantryman, he must perform a live-fire event as part of a mortar crew. For the battalion surgeon to perform triage as part of battalion aid station operations, it must be a live event (based on the available medical simulations at the time). The Infantry and Armor companies did not necessarily need to be in a field environment to train mounted maneuver with their platoon leaders, so we explored alternatives. Support platoon convoy operations, route selection, planning, and negotiation did not require physically driving tactical vehicles.

For each task and subtask, we quickly assessed the level of detail each required to meet the training objective. We built a matrix to identify which events required live execution and those which could be TADSS supported. By defining the level of fidelity, we began to shape the exercise design.

Building the Blended Training Environment

For live training, we scheduled the mortar range (including the firing and observation points) and coordinated with our artillery fire support team for observers during the live fire. The two-day live-fire exercise became our anchor point for the rest of the event. For the medical platoon, we determined that deploying the battalion aid station was necessary to execute some of the tasks, but we kept the location open until we determined the remainder of the exercise. Having tentatively fleshed out the live portion, we then went to the CCTT.

At the CCTT, we presented our training requirements and discovered that the facility had recently obtained the Kosovo terrain database. With this data, several things fell into place. First, we were able to place the battalion CPX in Kosovo, which enabled the staff to begin to plan against that terrain. Using the CCTT's constructive simulation feed into mission command systems in the M577 command post simulator, we were able to provide the commander and staff with a common operational picture and situation template to support the CPX objectives. Working with the CCTT facility staff, we developed a tactical scenario based on the S2 enemy

By understanding the capabilities of TADSS and properly integrating them to mutually support each other, battalions can create a single, detailed multi-echelon training event.

threat, and specifically identified the most probable enemy routes into our sector for the battalion defense scenario.

Next, we planned to use the M2 Bradley and M1 Abrams virtual simulators to provide an environment for the companies to maneuver their platoons. The remaining Infantry company would maneuver their company using a constructive simulation in the CCTT facility and would rotate with the company in the simulators to ensure each had the opportunity to use both assets. With input of the commanders, we defined the training playbox to allow for the company commanders to maneuver their platoons in a mobile defense and still define an engagement area for fires. Finally, we planned the use of the Infantry ground simulator which provided the squad leader an interface into the virtual environment of the CCTT.

Working with the scout and support platoon leaders and CCTT staff, we identified the virtual Camp Bondsteel and Camp Monteith from the Kosovo CCTT terrain database. We then identified the main and alternate supply routes (MSR/ASR) supporting both camps in the virtual environment. Bringing in the S2, commander, S3 and S4, we were able to shape the training event scenario to include both of these MSR/ASRs. By using the CCTT's wheeled vehicle simulators, we integrated both platoons into the planning and execution of the tactical scenario. Scouts would operate in the wheeled vehicle simulators during recon/counter-recon fight, then transition to a constructive unit (still visible to everyone in the virtual environment) operating out of the technical control work area. The support platoon would initially operate in the constructive environment and then enter the virtual environment to support the consolidation and reorganization phase of the event. This technique allowed the support and scout platoon drivers to conduct operations on the same ground they would travel during

the deployment. (Following this event, both the scout and support platoons returned to the CCTT to continue training operating on multiple road conditions to include limited visibility, rain, and darkness).

Because we had previously identified the most probable enemy avenue of approach in the scenario, we built the fires plan to incorporate the live-fire range. By using an overlay of the mortar live-fire area and superimposing this onto the Kosovo map set, we were able to link the mortar live-fire event with the tactical scenario and the CCTT. We set up an OE254 antenna outside the facility which connected the battalion fires cell in the simulator inside the facility with the observers and mortar fire direction center (FDC) on the live-fire range. The endstate was for the maneuver companies to request indirect fires from the battalion mortar platoon, the mortar platoon would execute the fire mission, and the personnel in the virtual environment would be able to observe and adjust the incoming rounds.

The live and virtual blended fire support plan used the following sequence:

1) A track commander in the virtual environment identifies a target in CCTT and initiates a call for fire mission.

2) The battalion FSO clears the fire location in the virtual environment, translates the grid from Kosovo to Fort Benning coordinates, clears the fire, and passes the mission to the 13F forward observers and mortar platoon FDC.

3) Both 13Fs and FDC validate that the adjusted grid is observable and in the impact area, then fires the mission in accordance with the request.

4) If the translated grid was not in the impact area, the battalion FSO would immediately deny the mission, keeping it transparent to the units in the field.

5) The FSO would serve as intermediary between the company commander and live-fire range for completion of the fire mission.

6) As "splash, over" was given by the FDC, the technician at the CCTT facility would place the virtual round in the Kosovo terrain.

7) Subsequent adjustments and end-of-mission instructions followed the same pattern. Although a bit clunky in execution, forcing the mortar platoon, FSO, and S3 integration allowed the entire fire support

team to be part of the planning process and execution.

The final element for the event was the integration of the medical platoon. Because the battalion was operating out of the CCTT facility, we decided to establish the battalion aid station (BAS) in the parking lot adjacent to the CCTT building. Next, we issued Multiple Integrated Laser Engagement Systems (MILES) casualty cards and moulage kits to the crews manning the CCTT M1 and M2 simulators. We also instructed the crews to bring an unserviceable uniform to change into if their vehicle was damaged or destroyed in the scenario. As vehicles and crews took casualties, the crew members would leave vehicle crew stations for the troop compartment, change uniforms as necessary to apply the moulage equipment and fake blood, and then open the door to their simulator. Non-injured crew members would perform combat lifesaving measures until medical assistance arrived. The battalion medics, staged in the BAS, entered the CCTT simulator bay through the adjacent large equipment door carrying kit bags and stretchers. The medics would then access and evacuate casualties to the BAS. At the BAS, the surgeon and medical platoon leader conducted triage and casualty reporting. Casualties were loaded onto waiting wheeled ambulances and evacuated to the aid station, replicating evacuation to the brigade support area.

Execution: What Went Right?

The battalion executed the blended training event successfully and clearly met the commander's training objectives. As the tactical scenario played out, the battalion staff executed tactical SOP processes, leveraged intelligence from the scouts, maneuvered Infantry and Armor companies to defeat the enemy threat, conducted fire support, and executed service support operations. We were also able to qualify our new 11C mortar Infantrymen on a live-fire range and provide a live event for our surgeon and medical platoon. This event occurred over two days

which allowed the rifle companies to rotate their crews through the M2 virtual simulators. By conducting the task analysis before jumping to a solution, we were able to match the correct TADSS or technique with the appropriate task. Detailed planning also enabled success – particularly determining when certain assets needed or didn't need to be in the scenario. This helped balance when we needed the scouts or the support platoon in the virtual environment allowing us to dual purpose a limited simulator asset. Our scout and support platoons were able to not only participate but operate on the MSR/ASRs that they would be driving on during the upcoming deployment. Finally, the medical play was executed perfectly. With many of our Infantrymen playing the part well, the medics were presented with a realistic live scenario to execute medical support operations.

Execution: What Didn't Go Right?

The fires planning and rehearsal went well, but linking the mortar live fire became cumbersome after the initial fire missions supporting the counter-recon fight. The mortar platoon eventually completed the live-fire certification outside the scenario. The translation of scenario to live-grid location went well, but it did require very detailed attention to make sure the two were linked. The next thing that did not go well was the Infantry squad integration into the event. At the time, the CCTT Infantry simulator was merely a single three-screen desktop monitor system with a joystick control. It did allow for integration of the platoon and squad leader, but the rest of the squad had to observe the event and not participate. If we could have linked a game such as Virtual Battlespace 2 (VBS2), for example, the Infantry squad could have had a more dynamic role and better training. The final lesson learned was the need to simplify integration of live, virtual, and constructive TADSS. Without a persistent capability on the installation, battalion staffs will need to conduct a lot of overhead planning and integration work to make an event like this one a success. The good news is that many of these problems are being addressed with the fielding of the next generation training capability, the Live-Virtual-Constructive Integrated Training Environment (LVC-ITE).

The Way Ahead

The LVC-ITE is a new training capability being developed to enable a persistent integrated training capability for installations. By linking instrumented live troops in a field environment, military gaming products like VBS2, virtual simulators and constructive simulations into a single terrain box, battalions will be able to conduct more blended training events with less planning overhead. Under development by the acquisition professionals at the Program Executive Office for Simulation, Training, and Instrumentation, the project enables blended training by providing these

Photo by Ryan Morton

A Soldier navigates through a scenario on the Virtual Battlespace 2 system during pre-deployment training at Army Support Activity-Dix, N.J., on 10 May 2010.

Photo courtesy of Bohemia Interactive Studio

For the VBS2, Bohemia Interactive Studio developed the gaming and training platform in cooperation with the Marine Corps, the Australian Defense Force, and other military customers. It includes a virtual battlefield on which users can operate land, sea, and air vehicles.

simulations common, correlated terrain for maneuver. At Fort Hood, Texas, for example, the simulators in the CCTT facility, and the constructive simulations and VBS2 run at the MCTC will all have the same Blackwell Table XII gunnery range built in detail to support training. This type of range will also be instrumented so that when a unit conducts live Table XII gunnery, Infantrymen maneuvering could be identified in a virtual training environment, in real time, in either a VBS2 scenario, a CCTT simulator or on a virtual video feed from a simulated unmanned aerial vehicle feed

into a battalion operations center. Once complete, this capability will be delivered to the FA57s at the National Simulation Center for user acceptance and testing, and then fielded to the force.

Conclusion

Creating a blended training environment to support battalion-level training can be challenging but rewarding. Commanders and S3s need to reach out to their BCT and division FA57 officers to assist in shaping training events to correctly leverage every possible TADSS, in a meaningful way, to meet training objectives. It is essential to conduct a task analysis and only bring what is needed to the table. This simplifies integration and prevents a case where TADSS are being shoehorned into a scenario unnecessarily. Task analysis, creative thinking, and correctly matching TADSS with associated tasks remain the keys to success when putting together a solid battalion blended training event.

LTC Joseph Nolan is currently assigned as the FA57 proponent officer, Center for Army Analysis, Headquarters, Department of the Army G8. He has been a Functional Area 57 - Simulation Operations officer since 2003, after serving 10 years in the Infantry. As a lieutenant in Panama, he served in the 5th Battalion, 87th Infantry (Light) as a platoon leader and S4 supporting Operation Safe Haven. At Fort Benning, he commanded C Company and HHC, 1st Battalion, 30th Infantry Regiment, 3rd Brigade Combat Team, 3rd Infantry Division, and later served as the Infantry Branch Representative. As an FA57, he served in various Joint assignments to include exercise planner, Multinational Forces-Iraq battle command officer, and as chief of the U.S. Joint Forces Command Joint Advanced Training Technologies Laboratory. LTC Nolan has a master's degree in modeling, virtual environments, and simulations from the Naval Postgraduate School, and is a 1993 ROTC graduate from the University of Detroit-Mercy.

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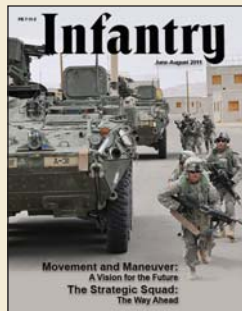
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RSLC:
COURSE TEACHES 'SCIENCE' OF GATHERING, REPORTING INTELLIGENCE

RANGER TRAINING BRIGADE

With overseas contingency operations (OCOs) drawing down over the next few years, the Army will once again be focusing on initial entry and stability operations both at home station and at the combat training centers (CTCs). This focus will emphasize the need for intelligence collection and reporting in reconnaissance and surveillance (R&S) units. These units will be tasked to conduct a variety of missions, from dismounted R&S operations preceding a larger entry force to developing and refining intelligence in an operational environment during stability operations. This, along with the Maneuver Center of Excellence's initiative to increase squad or small unit leader development in order to prepare young leaders to face the enemy across the spectrum of warfare, will put a premium on institutions that teach extensive squad-level planning and decentralized reconnaissance operations. The Ranger Training Brigade's Reconnaissance and Surveillance Leaders Course (RSLC) acknowledges these trends and understands the need to focus on small unit tactics along with locating, observing, and reporting intelligence on the battlefield.

RSLC is a 26-day course conducted by Delta Company, 4th Ranger Training Battalion at Fort Benning, Ga. The purpose of the course is to teach reconnaissance, surveillance, and target acquisition fundamentals to Soldiers, NCOs, and officers who are currently or may one day find themselves serving in reconnaissance units. What sets RSLC apart from other reconnaissance courses is the focus on those who actually execute reconnaissance and surveillance tasks. RSLC teaches the skill or the "science" of gathering and reporting intelligence. The target audience of RSLC is at the squad and team levels with an emphasis on dismounted reconnaissance and surveillance. Although the majority of students are E-4 through E-6, senior NCOs and officers are encouraged to attend and will no doubt be challenged. The course is not limited to Infantry Soldiers. RSLC has proved beneficial to many military occupational specialties as the course has trained Armor, Field Artillery, Signal Corps, and Military Intelligence Soldiers, to name a few. In recent years, RSLC has not only trained conventional and special operations Army units, but has also trained Marine Corps, Navy, and Air Force service members. As word has spread about the course, inter-agency partners in law enforcement have sought instruction on the technical aspects of collection reporting and communications.

RSLC is a physically and mentally demanding course where one block of instruction builds upon the next, culminating in a multi-day, graded, field training exercise where students execute the skills they learned in both urban and wooded environments. In the first week, students execute a seven-hour land navigation course that covers approximately 15 kilometers during both the daytime and hours of limited visibility. They receive instruction

Reconnaissance and Surveillance Leaders Course students conduct special purpose insertion/extraction system training.
Ranger Training Brigade photos

on the fundamentals of reconnaissance and surveillance and are taught how to use equipment in the Army inventory such as thermals and range finders as well as commercial-off-the-shelf (COTS) equipment such as single-lens reflex (SLR) cameras to capture intelligence. Students learn how to camouflage themselves and equipment, stalking techniques, and the selection, occupation, and concealment of surveillance sites. The first week culminates in an airborne operation, exposing airborne-qualified Soldiers to the considerations needed for a static-line parachute insertion. Another factor that makes RSLC unique is that the course is designed to accommodate military freefall (MFF) teams that attend. Select cadre members are MFF and MFF-Jumpmaster qualified, allowing those teams the opportunity to learn planning considerations of MFF operations as they pertain to reconnaissance and surveillance missions.

Week two begins with a two-day communications class. During this block of instruction, students learn how to send messages across the frequency spectrum, using high frequency (HF), very high frequency (VHF), and ultra high frequency (UHF) radios. Along with conducting voice communications, students learn to send messages using high performance waveform (HPW) which allows reconnaissance Soldiers to send written reports and pictures on Microsoft Outlook using the PRC-150 and PRC-117F radios. This skill gives commanders the ability to receive timely, accurate intelligence. Building on the ability to send intelligence via radio, students conduct area and zone reconnaissance as well as static and active surveillance throughout the week in both urban and wooded terrain, perfecting their reporting formats and fieldcraft. Students continue their exposure to insertion and extraction techniques by conducting fast rope insertion/extraction system (FRIES) and special patrol insertion/extraction system (SPIES) training.

The final week and a half are spent with students learning how to plan an operation using the troop leading procedures (TLPs) and incorporating air movement, fires, as well as evasion and recovery planning. Following the orders process, students conduct a 48-hour non-graded situational training exercise (STX) where they will execute the mission they just planned under the watchful eye of RSLC instructors, allowing the students to ask questions and receive assistance along the way. Once this mission is complete and after action reviews (AARs) are conducted, the students go into isolation planning for their graded culminating field training exercise (FTX). Throughout the FTX, students will execute and be graded on all the skills they learned from planning, reconnaissance and surveillance operations, intelligence reporting techniques, communications, fires, evasion and recovery, and small unit tactics to name a few. The end result is a graduate with the skill to plan and conduct a myriad of reconnaissance and surveillance operations, enhancing the ability of any brigade combat team.

RSLC is not the Long Range Surveillance Leaders Course of yesteryear. Although RSLC is a course within the Ranger Training Brigade, this is not the fourth phase of Ranger School nor is it mandatory to be airborne or Ranger qualified to attend. RSLC is a constantly evolving course, seeking lessons learned from Operation Iraqi Freedom/New Dawn and Operation Enduring Freedom. RSLC fosters a learning environment where Soldiers from units across the spectrum from conventional Army units to Special Operations Forces (SOF), Marines, Air Force, Navy, and even inter-agency partners can share experiences along with techniques, tactics, and procedures (TTPs) to make the course and students better. RSLC has the added benefit in that the course has the ability to conduct mobile training teams (MTTs) and during cycle breaks can conduct "menu-based" training. This "menu-based" option is attractive to SOF units and those on an accelerated deployment cycle as it allows the unit to focus on the training it needs in anticipation of future mission sets.

A final advantage of RSLC is cost to the unit. RSLC is a live-in course where students have government quarters and meals provided. As budgets begin shrinking, RSLC provides cost-effective training where units only pay the cost to get their Soldiers from home station to Fort Benning. Additional course information can be found on the Ranger Training Brigade Web site under the RSLC link (http://www.benning.army.mil/infantry/RTB) and on the Army Training Requirements and Resource Systems (ATRRS) Web site (https://atrrs.army.mil).

If there are specific questions regarding RSLC, contact MAJ Zach Corke at (706) 544-6100 or zach.corke@us.army.mil.

Rangers Lead the Way!

A Reconnaissance and Surveillance Leaders Course student conducts surveillance.

BRADLEY GUNNERY: BACK TO THE BASICS

MAJ MATTHEW LEE
CPT ROBERT CUTHBERTSON

Troops from 2nd Squadron, 11th Armored Cavalry Regiment (2/11 "Eaglehorse") recently took advantage of a training opportunity to conduct Bradley Fighting Vehicle gunnery at the National Training Center (NTC), Fort Irwin, Calif. Although 2/11 is considered to be a mechanized unit, our primary mission during each NTC rotation is to serve as either contemporary operating environment forces (COEFOR) — insurgents and enemy to the training unit — or as Iraqi/Afghan security forces which partner with the rotational training unit (RTU). This unique mission set enables us to hone our dismounted skills through attacking combat outposts during situational training exercises as well as through team, squad, and platoon live-fire exercises. Additionally, we have the opportunity to train on mounted skills through Bradley gunnery and COEFOR operations and train combined arms maneuver with an organic engineer company and aviation assets available to us. Like most units, we are challenged to fit it all in. We would like to share how we were able to accomplish it as we prepared for Bradley gunnery.

Inexperience with Bradleys was prevalent in our unit. Only one platoon sergeant in the entire troop had prior experience with a Bradley, leaving 13 of 14 crews with no experience. Many of the Soldiers had previously served in light Infantry units or were in mechanized units that had functioned as light or motorized Infantry while deployed to Iraq or Afghanistan. The only way to overcome this challenge was through proper training management. The troop commander and S3 outlined the eight-step training model three months in advance with all the time available to train. This included how to utilize opportunity training and sergeants' time training; establishing leader professional development and train-the-trainer sessions to support the gunnery; and, finally, after action reviews (AARs) and disseminating lessons learned throughout the regiment.

This article will outline 2/11's Bradley gunnery in terms of planning, preparation, rehearsals, and execution for other units facing similar challenges so they can get back to the basics.

First and foremost, units should stick with tried-and-true backwards-planning techniques when outlining the training timeline and use the applicable training manuals to ensure that all prerequisites are accounted for and completed. While these two tips can be applied to any gunnery, F Troop, 2/11 used ST 3-20.21-1, *Crew Live-Fire Prerequisite Training,* to define all the training tasks on the Bradley. This manual is a great reference as it breaks down each prerequisite into task, condition, and standard. Adherence to this also ensures consistency of understanding among all crews.

During the initial planning, the squadron commander, S3, and troop commander need to outline and agree upon the train-up timeline. This way, all training associated with the gunnery is understood and protected on the training calendar, ensuring fewer distractions for what has been identified as the high-priority training event. The troop commander, in our case, identified that he would require at least two weeks in order to conduct all the prerequisites and preparations in accordance with ST 3-20.21-1. In addition to the basic ST standards, the commander also identified several other areas that needed to be addressed. One area in particular that made this troop successful was identifying that additional maintenance and driver's training would be needed due to the Soldiers' unfamiliarity with the Bradley. He began to address this issue by organizing preventive maintenance checks and services (PMCS) classes and getting every member of the crews qualified to drive the Bradley as soon as the gunnery was planned, which was several months in advance.

Next, the troop commander required that the Soldiers drive their Bradleys to and from routine training events in lieu of using the wheeled vehicles they were accustomed to. This served two purposes:

1) The crews continued to develop basic proficiency in all 10-level tasks and improved communication skills amongst the crews; and

2) Because the Bradleys had been underutilized in the past, the increased use allowed crews to identify maintenance issues early on, correct issues prior to gunnery, and identify common parts that

needed to be kept on hand as part of the prescribed load list (PLL).

Second, the squadron identified weaker areas to focus on in addition to the standard prerequisites for their preparation and training leading up to the gunnery. Due to unfamiliarity with the Bradley across the board, the troop commander developed a train-the-trainer plan to develop the junior leaders on the basic tasks and Bradley Gunnery Skills Test (BGST). A key part of the train-the-trainer plan was using subject matter experts in the troop to teach these basic skill sets.

Along with maintenance and operation of the Bradley, they also trained leaders on each weapon system including assembly, disassembly, loading, unloading, engaging, and performing immediate action/misfire procedures on the 25mm "Bushmaster," M240C 7.62mm machine gun, and TOW (Tube-launched, Optically-tracked, Wire command-link guided) missile system. Obtaining dummy rounds and continuously rehearsing with these weapon systems were key parts of this training. Additionally, a train-the-trainer was conducted by the master gunner with all vehicle-crew evaluators (VCEs). This turned out to be important during the gunnery as the crews were provided consistent feedback during execution.

The train-the-trainer also turned out to be critical for follow-on training, to include sergeants' time training and opportunity training, because it gave the Soldiers confidence in their leaders and the leaders confidence in their own skills. It also served as a dry run for the follow-on training so that subsequent iterations ran more smoothly.

Third, extensive and thorough rehearsals are critical to conducting any training event, especially if it is outside of the "norm" or comfort area of a unit. Because of this, the troop commander allocated specific times in his training schedule that outlined a rehearsal prior to each training event. One rehearsal focused on administrative range operations as the crews were unfamiliar with using their Bradleys on a range. A terrain model was utilized for this rehearsal and included the Bradley commander and gunner using their arms to replicate the direction of the gun barrel. This was critical prior to section-level gunnery. Another rehearsal was conducted to increase engagement proficiency using a moving wheeled vehicle to replicate a target so that crews could practice fire commands and maneuver.

Fourth, the execution phase should go smoothly if all other phases have been planned and completed to standard. In F Troop's case, the command emphasis on this event and diligence in identifying and addressing weak areas during the planning and training resulted in 100 percent of their crews Q1 (qualifying first time go) on Table VI in their first gunnery as a troop. The crews were able to go into their gunnery with confidence because they knew exactly what to expect due to their intense training and rehearsals.

Once the gunnery was complete, the challenge we still continue to work through is how to maintain proficiency. Our unit, like most, was allocated 25mm ammunition that only supports two gunnery qualifications per year — one crew

level and the other up to platoon level. With these ammunition constraints, our focus remained on training management and locking in resources such as the Close Combat Tactical Trainer (CCTT) and the Unit Conduct of Fire Trainer (UCOFT). We gave guidance that each crew will spend four hours per month in the UCOFT and continue to focus opportunity training on the BGST, Bradley Gunnery Table I, and target engagement techniques that minimize resource requirements.

Additionally, we are working to obtain the Precision Gunnery System (PGS) and Laser Target Interface Device (LTID). The PGS is installed on the Bradley and emits a laser enabling the Bradley commander real-time feedback for all target engagements. Additionally, the SIM card can be pulled from the PGS following the iteration, enabling crew members to view all engagements during their AAR. The LTID has Multiple Integrated Laser Equipment System (MILES) sensors placed on each target, enabling real-time target feedback. Utilizing these systems would drastically increase target engagement skills without utilizing ammunition. By placing a command emphasis on improving these Bradley warfighting skills and dedicating appropriate time to training management, units can achieve immediate success and maintain Bradley proficiency.

MAJ Matthew Lee is currently serving as the S3 for the 2nd Squadron, 11th Armored Cavalry Regiment at Fort Irwin, Calif. He was commissioned in 2001 from the U.S. Military Academy at West Point, N.Y. He served as a platoon leader, executive officer, and S3 Air with the 1st Battalion, 187th Infantry Regiment, 3rd Brigade Combat Team, 101st Airborne Division, Fort Campbell, Ky.; a G3 training officer with 2nd Infantry Division in Korea; a company commander with the 2nd Battalion, 22nd Infantry Regiment, 1st Brigade Combat Team, 10th Mountain Division at Fort Drum, N.Y.; and company team and task force S3 combat trainer at the National Training Center at Fort Irwin.

CPT Robert Cuthbertson was commissioned from ROTC at the University of Tampa in May 2006. Upon completion of the Infantry Basic Officer Leadership Course, he was assigned to 1-187 IN, 3rd BCT, 101st Airborne Division at Fort Campbell, where he deployed in support of Operation Iraqi Freedom. Following redeployment, he attended the Maneuver Captains Career Course at Fort Benning, Ga., and then commanded F Troop, 2nd Squadron, 11th Armored Cavalry Regiment.

Photos courtesy of authors

Soldiers with F Troop, 2nd Squadron, 11th Armored Cavalry Regiment, prepare to conduct Bradley gunnery exercises at Fort Irwin, Calif.

Utilizing MWD Teams at JRTC

MAJ GEORGE WALTER, SFC MARK J. VECHINI, AND LAWRENCE DRISCOLL

The Joint Readiness Training Center (JRTC) at Fort Polk, La., recently began embedding military working dog (MWD) teams with brigade combat teams (BCTs) during pre-deployment mission rehearsal exercises (MREs). In August, the 4th Brigade Combat Team (Airborne), 25th Infantry Division was the first BCT to integrate three MWD teams during its JRTC rotation. JRTC trainer/mentors (T/Ms) watched the dog teams during pre-rotational training, situational training exercise (STX) lanes, and, finally, force-on-force (FoF) training. The MWDs enhanced the effectiveness of the rotational training unit (RTU) as it tackled the various missions put before it in the course of the MRE.

In this article, we offer some initial observations from the first effort to integrate MWDs into the MREs at the JRTC. Bear in mind that these are not trends built over a period of several months. Given the small sample size, they are but snapshots taken at a single training opportunity. With that said, we believe they offer emerging insights into the challenges of integrating specialized MWDs into a BCT and nascent observations of their importance to the force. Many of our comments and observations are addressed within the tactical explosive detection dog (TEDD) program, but they remain valid for the other MWD teams where the handler is not organic to the maneuver force.

Direct Versus General Support. Like any enabler, integrating MWDs required the BCT to specify the teams' support roles; not surprisingly, the BCT chose to use the MWD teams in a combination of direct support (DS) and general support (GS) roles. Regardless of support roles, the dog teams performed admirably;

Above, a military working dog team participates in a mission alongside Soldiers of the 4th Brigade Combat Team, 25th Infantry Division.
Photos courtesy of authors

their integration, however, showed varying levels of success. One team served in a DS role and two in GS roles. In general terms, the GS dog teams were available by request through the BCT Provost Marshall Office (PMO) through the S3 and on to the G3. Although a bit shorter than in theater, each request required submission 24 hours in advance to allow proper integration into planning, rehearsals, and execution. The BCT used this process through the course of the rotation and, in-spite of the short notice, did allow ample ability to stress the systems while allowing commanders access to the dogs.

Results varied by mission as some commanders better understood the teams' capabilities and their requirements. The commanders' familiarity with MWDs was the primary reason for lack of integration. Commanders who had worked intimately with dogs in the past got better results than those who had not. This was most evident at the company level. In turn, the lack of utilization of MWDs from planning to employment led to missed opportunities to benefit from their unique capabilities. For example, the one maneuver force DS team participated in only two missions during FoF; they remained idle for the remainder of the training. Using a 24-hour planning cycle at the company level, the DS dog team had a 40 percent utilization rate. Although this was the maneuver force's decision, inclusion could have greatly increased a platoon or company's effectiveness, particularly for entry control points, traffic control points, tactical site exploitation, and cordon and

search. Applying a 24-hour mission cycle to the FoF training in total, there were 15 missions that offered potential for MWD participation. They participated in seven missions, a 46.7 percent utilization rate.

Integration starts in planning. The cases where commanders did not understand the MWDs became classic examples of not knowing what you don't know; we noted that the teams were often left out in the planning and rehearsals. Making maximum use of MWDs on the objective begins with the planning of the operation. They should be included in all steps through actions on the objective. Anything less than full integration allowed the MWDs to distract, or in some cases, detract from mission execution. When the dogs were included in all phases, both units and MWD teams had a better understanding of capabilities and requirements. This allowed the unit and the handlers to iron out specific issues prior to pre-combat checks and inspections.

Education and Integration Goes Both Ways

Up to this point, we have focused on what a gaining unit needs to know and do to make best use of a MWD team. The other half of this partnership — the dog and its handler — have their own work cut out for them.

The handler must grasp and use basic tactical skills. A MWD handler must be prepared to join a route clearance team (or any other tactical mission). We as an institution tend to focus on the dog as the enabler as opposed to the handler. Our handlers have bonded with their dogs; that is very much a good thing. But the handler has two critical tasks — the first is handling the dog so that it can achieve success and the second is integrating the MWD team smoothly with a small tactical unit. The dog knows his job, but handlers do not know how to move tactically as a member of a fire team or squad. This skill should be honed before the Soldier is given a dog, as both his life and the dog's depend on it. In addition to moving as a member of a fire team, the MWD handler must know how to react to contact and how to recover the dog while putting accurate fire on the enemy. The handler must be very proficient in recognizing improvised explosive device (IED) indicators and doing basic terrain analysis as to where the enemy may

> *Making maximum use of MWDs on the objective begins with the planning of the operation. They should be included in all steps through actions on the objective. Anything less than full integration allowed the MWDs to distract, or in some cases, detract from mission execution.*

emplace IEDs and trigger men. A fire team leader has his own fight without having to tell the handler what to do.

However, dogs have something to learn as well. We noted that the MWDs seemed unaccustomed to the cumulative impacts of a battlefield. On any given mission here at the JRTC, MWDs are likely to be exposed to civilians, opposing forces, farm animals, explosive residue, and noise dramatically different from what they likely experienced during certification by nearby kennel masters at home station. Although something of a generalization, we observed that the dogs' acclimatization increased with training opportunities through the rotation. In the case of one dog team, the dog attempted to climb back into the vehicle as a mission moved into a kinetic phase in STX lanes. During FoF, the same dog was much more relaxed when it encountered battlefield stimuli. There is a four-week acclimatization program in theater but to add to that, JRTC offers the opportunity to increase the MWD stimuli threshold prior

to arrival in theater. Our takeaway was that the dogs' ability to sort out the competing stimuli increases with repetition in our complex, simulated environment.

Looking to the Future

In the future, we see several opportunities to increase the effectiveness of our maneuver forces and MWDs. First, increase efforts to educate commanders' understanding of MWDs, capabilities, and limitations to the force. Currently, education of commanders is the top priority of U.S. Central Command (CENTCOM), U.S. Army Forces Command (FORSCOM), Maneuver Support Center of Excellence (MSCoE), and the MWD communities. Reinforcing this, the Army Testing and Evaluation Command (ATEC) is working to publish a new Commander's Handbook by April 2011 to be used by commanders from all services. MSCoE has prepared a Warfighter's Forum briefing to leaders on MWD. Similarly, CENTCOM and FORSCOM are working to develop required commander's pre-deployment training material on MWDs. The TEDD management team from MSCoE has begun orientation training for BCT leaders getting TEDDs. We feel that with maneuver force buy-in, these initiatives will greatly increase the impact of MWDs across our formations. Further, we believe similar efforts should be taken to educate formations at the battalion and company levels. We believe beginning this process at approximately the D-180 phase of Army Force Generation would greatly increase

The Joint Readiness Training Center (JRTC) recently began embedding military working dog teams with brigade combat teams during pre-deployment mission rehearsal exercises.

our effectiveness in time for deployment or for assumption of the Global Response Force. Dog teams are available at almost every post and this would have minimal cost to the force at large, but training must be done to cover all types of MWDs.

Second, we highly recommend increased rotational use of MWDs at all combat training centers (CTCs). Given our observations, the battlefield effects replication here is as close as units will reliably get prior to deployment. To that end, inclusion of MWDs will offer a two-fold impact. Commanders will get used to planning and rehearsing with MWD teams and eventually seek out the teams. Third, we feel that the CTC experience acts as a quantifiable vetting process for MWD certifications as dog teams get used to interacting with maneuver forces and increased exposure to battlefield stimulus which cannot easily be replicated at home station kennels. Finally, we recommend that MWD handlers receive some sort of basic tactical leader training — similar to the U.S. Marine Corps Yuma MWD pre-deployment course.

Acknowledging that our observations are limited in scope and therefore insufficient to represent trending, we do feel that incorporation of these observations into future training will lessen the level of pain in becoming lessons learned. Although our usage of MWDs here at the JRTC is in its infancy, we are committed to training units on the use of MWDs as they prepare for combat. Currently, we are building on-site dedicated kennels as well as writing mission sets that include planning and execution of missions with the use of MWDs. For our model, we are looking toward progressive training sets for the MWDs from three days of dedicated lane training with explosive ordnance disposal (EOD), through complete STX integration for both the cordon and search and IED-Defeat lanes and, finally, forward progression into force on force. To this end, we at JRTC remain interested in comments on needs of the field as we work to achieve our goals of increasing the effectiveness of the MWDs in order to stay abreast of changes in the operational environment and within the construct of doctrine, organization, training, materiel, leadership and education, personnel, and facilities (DOTMLPF).

MAJ George Walter is an engineer officer currently serving at the Joint Readiness Training Center (JRTC), Fort Polk, La., as the Task Force 4 (Brigade Special Troops Battalion) senior operations trainer/mentor. His past assignments include serving with the 307th Engineer Battalion, 82nd Airborne Division; 173rd Combat Support Company, 173rd Airborne Brigade; Southern European Task Force; and 82nd Headquarters and Headquarters Battalion/Division Special Troops Battalion, 82nd Airborne Division. He is a graduate of the Engineer Officer Basic Course, Ranger School, Jumpmaster School, Infantry Captains Career Course, Command and General Staff College (ILE) and the Joint Engineer Operations Course. He holds a bachelor's degree in systems engineering from the U.S. Military Academy at West Point (1996) and an International Master of Business Administration from the University of Southern California (2007). He has operational and combat experience in the Balkans, Iraq, Liberia, Morocco, and Afghanistan.

SFC Mark J. Vechini is a 12B4 who entered service in January 2000 and is currently assigned as the JRTC Operations Group engineer and Military Working Dog planner. His past assignments include serving with the 1st and 3rd Brigade Combat Teams of the 10th Mountain Division. He is a graduate of Air Assault School, Warrior Leader Course, and Engineer Basic NCO Course. SFC Vechini has participated in multiple deployments to Afghanistan as part of Operation Enduring Freedom.

Larry Driscoll is a Joint Improvised Explosive Device Defeat Organization (JIEDDO) route clearance/dismounted operations instructor currently serving at the JRTC with the Operations Group and Task Force 4. He retired after serving 22 years as an Infantryman and has deployed to the Operation Iraqi Freedom theater in support of the war on terror. He is also a veteran of Operation Desert Storm. His past assignments include serving with the 4th Brigade, 10th Mountain Division; 3rd Infantry Regiment; 2nd Battalion, 39th Infantry Regiment; 1st Battalion, 4th Infantry Regiment; and postings with the 2nd and 3rd Brigades of the 101st Airborne Division (Air Assault).

THE NEED TO TRAIN ON FOREIGN WEAPONS

MAJ JIM TIERNEY

"Learn their weapons. You must be an SME (subject matter expert) on your weapons and at least familiar with theirs to successfully coach them on effective employment."
— **FM 3-07.10,** *Advising Multi-Service Tactics, Techniques, and Procedures for Advising Foreign Forces*

It's time the U.S. Army started providing Soldiers with formal training on the foreign weapons most commonly used either by the enemy or by friendly host-nation military and police forces.

Advising Foreign Forces

Nearly every conflict in which the U.S. Army has participated — including present-day operations in Afghanistan, Iraq, and Africa — has included some form of mission requiring Soldiers to train host-nation forces. Yet we as an Army fail to adequately prepare today's trainers on how to conduct foreign weapons instruction to foreign militaries should the need arise.

Joint Publication 1-02 defines a mobile training team (MTT) as a team consisting of "… one or more U.S. military or civilian personnel sent on temporary duty, often to a foreign nation, to give instruction. The mission of the team is to train indigenous personnel to operate, maintain, and employ weapons and support systems, or to develop a self-training capability in a particular skill. The Secretary of Defense may direct a team to train either military or civilian indigenous personnel, depending upon host-nation requests." (emphasis added)

In today's operational environment, the training of national armies, police, and other extensions of the host-nation's government or other indigenous forces has proliferated throughout the U.S. Army's "conventional" forces. Thousands of Soldiers and hundreds of units have deployed in support of Operations Enduring Freedom, Iraqi Freedom, and New Dawn to conduct training under a myriad of transition teams, including military transition teams (MiTTs), embedded training teams (ETTs), police transition teams (PTTs), special police transition teams (SPTTs), operational mentor liaison teams (OMLTs),

validation training teams (VTTs), and border transition teams (BTTs). Throughout Africa and Europe, conventional units from both the active and reserve components now routinely deploy to train and mentor host-nation militaries. Units train indigenous forces in small-unit tactics, which include individual and crew-served weapons training.

At an Association of the U.S. Army convention in 2007, then Secretary of Defense Gates stated, "The standing up and mentoring of indigenous armies and police — once the province of special forces — is now a key mission for the military as a whole… How the Army should be organized and prepared for this advisory role remains an open question and will require innovative and forward thinking."

Foreign-force advisor teams are routinely required to provide the host nation with basic and advanced marksmanship training. Additionally, they are required to track and assist in maintaining foreign-force equipment and weapons issued to the host-nation unit. The majority of weapons being used by foreign-force military and police units are Soviet-style small arms such as the AK-series assault rifle, the PK-series machine gun, and the DShK heavy machine gun. At this time, however, the Army offers limited formal training to Soldiers on these or other weapons commonly found in the environments in which they operate. Soldiers tasked with the mission of providing small-arms instruction or weapons qualification must rely largely on dated manuals, Internet references, and previous experience.

The Army preaches composite risk management in all aspects of training and combat operations — yet when it comes to foreign weapons, we turn a blind eye to safety. What would the ramifications be for a leader who not only put a weapon into the hands of a Soldier not trained on that weapon, but who also put that Soldier in charge of teaching others how to use it safely? This problem would be compounded by the trainees' own lack of safety awareness, which would further raise the risk for the students and instructor alike.

Know the Environment/Know the Enemy

Leaders conduct mission analysis using the mission variables of METT-TC factors to make significant deductions about the enemy and his capabilities. The leader uses these deductions as a driving factor in operational planning and execution. Knowing whether the enemy's most effective casualty-producing weapon is a PKM medium machine gun or a DShK heavy machine gun will heavily influence the leader's decision-making about the tactical employment of his unit. Of equal concern would be the ability to distinguish those weapons in a cache. The lack of accurate and detailed reporting prevents situational understanding of the operational environment.

Maintaining a foreign small arms instructor at the unit level would provide commanders with a resource to accurately identify weapons and ammunition found in caches or recovered during battlefield engagements. Foreign weapons instruction would assist the commander in determining standoff distances and force-protection levels, in creating effective engagement zones, and in reacting to enemy-initiated actions.

The ability to identify foreign small arms becomes even more

Maintaining a foreign small arms instructor at the unit level would provide commanders with a resource to accurately identify weapons and ammunition found in caches or recovered during battlefield engagements.

important during the inspection of recovered ammunition. Too often, units will report weapons in cache reports in a generic categorization ("AKs" or "assault rifles") or altogether incorrectly (e.g., mistaking an AKM for an AK-74). The effects of a "standard" antitank rocket-propelled grenade (RPG) versus a tandem or even thermobaric RPG are extremely different and may portend the arrival of a new and more lethal weapon system in the area of operations. The lethality of an armor-piercing incendiary (API) round is greater than those of standard ball ammunition, and the presence of API rounds could affect a commander's decision about body-armor configuration (e.g., full-vest or plate carrier for this mission). Yet commanders are left blind to these and other differences that should have an impact on their mission command and decision making.

Commanders already have several assets available, but none that are dedicated to providing foreign small arms expertise. For example, commanders are often provided "slice elements" such as explosive ordnance disposal (EOD) and weapons technical intelligence (WTI) teams but the primary missions of these elements fall outside this lane. Weapons intelligence teams (WITs) are primarily technical-intelligence teams — the initial scope for these teams included improvised explosive devices (IEDs) as well as conventional weapons, but their emphasis has been on IED exploitation. So although all of these teams are valuable assets, they do not negate the need for a conventional, foreign small arms asset at the company level.

In Time of Need

U.S. service members need to be prepared to win in battle despite overwhelming odds. Soldiers engaged in combat operations need to know how to correctly employ the foreign weapons when required, such as when a Soldier's own weapon is rendered inoperable or a lack of ammunition requires him to use the enemies' weapons — not only to survive but to defeat the enemy.

COL James Coffman was awarded the Distinguished Service Cross for actions he took during a lengthy battle on 14 November 2004 in Mosul, Iraq, while assigned as the senior advisor to the 1st Iraqi Special Police Commando Brigade. At one point, an enemy round shattered COL Coffman's shooting hand and rendered his M4 rifle inoperable. After bandaging his hand, COL Coffman picked up AK-47s from Commando casualties and fired them with his other hand until they ran out of ammunition.

Marine 1LT Brian Chontosh was awarded the Navy Cross while assigned to First Marine Expeditionary Force in support of Operation Iraqi Freedom on 25 March 2003. When his unit came under fire from enemy fighters occupying a nearby trench, 1LT Chontosh began to clear the trenchline. After his own ammunition was depleted, he twice picked up discarded enemy rifles and engaged the enemy. When a Marine following him found an enemy RPG launcher, 1LT Chontosh used it to destroy yet another group of enemy soldiers. When his audacious attack ended, he had cleared more than 200 meters of the enemy trench, killing more than 20 enemy soldiers and wounding several others.

The USMC Model

The U.S. Marine Corps already offers a standard baseline in foreign weapons training that the Army should offer as well. Each Marine Infantry officer undergoes familiarization training as part of the USMC Basic School's Infantry Officer Course (IOC). According to the course introduction, students receive this training because each officer must have a working understanding of the potential threats, capabilities, and limitations enemy threats bring to the battlefield.

The Foreign Weapons Instructor Course (FWIC), offered by the Weapons Training Battalion at Quantico Marine Corps Base, Va., is a two-week course with three goals:

1) Provide unit commanders the capability of having a foreign-small-arms instructor on hand throughout a deployment;

2) Provide students the skills necessary to return to their units and instruct other Marines on the use of the most commonly found foreign weapons; and

3) Assist the unit commanders' ability to give weapons instruction to foreign militaries should the need arise.

In addition, the FWIC provides a comprehensive overview of several foreign weapons, including the AK-series assault rifle, the G-3 and FN FAL battle rifles, the SVD-designated marksman rifle, the RPK light machine gun, and the RPD and PK medium machine guns. The selection of these weapons was intentional—they are some of the most commonly used weapons worldwide, and they are used by both friendly and enemy forces. The course also provides overviews on RPGs, DShK heavy machine guns, 82-mm mortars, numerous other small arms and ammunition, and the principles of small arms and ballistics.

Although Soldiers can attend the USMC FWIC, priority rightly goes to the Marines. The Army should adopt a similar additional skill identifier (ASI) producing course to provide units with school-trained foreign-weapons instructors. The Army version of an FWIC should not be designed as a replacement for the longer and more exhaustive 18-B course; rather, it should focus strictly on those weapons a conventional Soldier will be asked to teach as part of an established ETT/MiTT.

Recommendations

With Secretary Gates' speech in mind, the Army should embrace foreign weapons training as a standard of training for maneuver units and units assigned as foreign-force advisors. Foreign-force advisors are currently being drawn from the total force of Army, Navy, Air Force, and the Marines. This shift of a once-unconventional mission to the conventional forces requires the Army to ensure that Soldiers are adequately prepared to succeed. Recommendations include the following:

• Incorporate foreign weapons training into the Maneuver Captains Career Course and the Infantry Officers Basic Course. Early familiarization of foreign weapons and their effects will provide a more adaptive officer corps.

• Institute a foreign weapons instructor course. Create an ASI for graduates of the course. This course should train Soldiers on the characteristics, assembly and disassembly, zeroing, firing, and maintaining of common foreign weapons to include the AK-series assault rifle, the G3-series rifle, the SVD "Dragonuv"-designated marksman rifle, the RPK light machine gun, the PK medium

Photo by SPC Roland Hale

A 1st Infantry Division Soldier fires an assault rifle during foreign weapons training at Camp Taji, Iraq, on 28 April 2010.

machine gun, the DShK heavy machine gun, and the RPG-7. The course should also train Soldiers on the identification and characteristics of small-arms ammunition.

• Create authorized positions for the FWIC ASI throughout a brigade combat team.

• Maximize training on foreign weapons for maneuver brigades and below deploying overseas. Require foreign weapons training for all units serving in an advisory role to a foreign force (such as a military or police unit).

Summary

As leaders, we would be remiss if we put a Soldier who lacked formal training behind a weapon. Soldiers deploying into a theater of operations are required to qualify on their individual weapons prior to even leaving the continental United States (and even that isn't always enough — many units are also subject to re-qualifications in Kuwait prior to crossing into Iraq). Yet we currently deploy Soldiers without providing them any formal foreign weapons training.

The Army needs to implement formal training on foreign weapons for three reasons — first, to ensure that our Soldiers are prepared when serving as advisors or as part of a training team tasked with enabling foreign forces (such as the Afghan National Army or Iraqi National Police) to become more professional; second, to help leaders understand their environment, the enemy, and the enemy's capabilities; and third, to provide Soldiers the ability to use the enemy's weapons against him in time of need (e.g., the inoperability of an individual weapon or the depletion of ammunition). Not preparing our Soldiers to safely and successfully employ the most common foreign weapons creates a risk we should no longer be willing to accept.

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The author wishes to thank the members of the NGIC Small Arms Team for their insights and expertise.
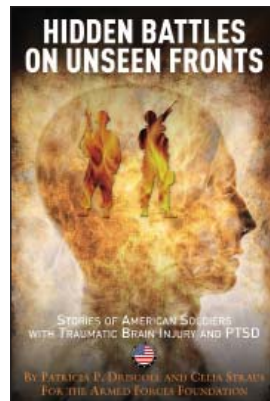
Book Reviews

Hidden Battles on Unseen Fronts, Stories of American Soldiers with Traumatic Brain Injury and PTSD. By Celia Straus. Drexel Hill, PA: Casemate, The Armed Forces Foundation, 320 pages, $27.50.

Reviewed by LTC William K. Everett, U.S. Army Reserve.

In this book, Soldiers with problems of re-entry into society or even their own families are vividly illustrated with intense case histories showing a variety of methods how these problems are treated. Children and spouses of Soldiers with mental issues are included in these case histories, so plentiful examples are present on how to deal with these family issues as well as personal adaptation issues. Expert advice from the social and psychological experts who wrote the book's case histories is also included in this book. The book flows well except for the sections that discuss what a veteran's hospitals can provide, the VA's polytrauma system of care and how it works, the healing process of PTSD, and how to face one's fears. These items are very informative but give the collection a feeling of disjointedness where the case studies could have told the entire story. The analysis of care best belongs in other books. The case histories stand on their own with a startling impact in their harsh reality. After reading this collection, a Soldier would get the key idea that there are a lot of reasons to have hope and that the human brain is a wonderful organ that has remarkable recuperative capabilities.

This collection of battlefield survival stories is best summed up with the words of Kathy Pearce, the mother of Army SGT Brent Bretz: "The reason I tell and retell the story of my son is in the hope it will help other families that are going through the same thing, and to let them know it takes prayer, faith, hope, and courage to get through every day." These stories will not only encourage those in similar situations, but there is a wealth of information on what can be done to improve the lives of those who survive battlefield trauma. This collection is required reading for wounded warriors and their families and highly recommended reading for all military leaders to better understand what their subordinates may have to try to do to recover from battlefield injuries.

The Culture of War. By Martin van Creveld. New York City: Ballantine Books, 2008, 512 pages, $30.

Reviewed by LTC (Retired) Rick Baillergeon.

A Martin van Creveld book comes with some lofty expectations. First, you expect it to focus on a subject area most military historians would never consider or attempt to cover. Second, you expect it, at times, to be controversial and to question the ideas, thoughts, and opinions of others. Finally, you expect it to be exhaustively researched, cover a subject in extraordinary depth, and be filled with information you did not know before.

For those unfamiliar with van Creveld, these expectations may seem challenging. However, there is no question *The Culture of War* clearly meets or exceeds these expectations. It is a volume, clearly unique, provocative, highly researched, and extremely thought provoking. It is one of those rare books that will quickly be widely acknowledged as a classic.
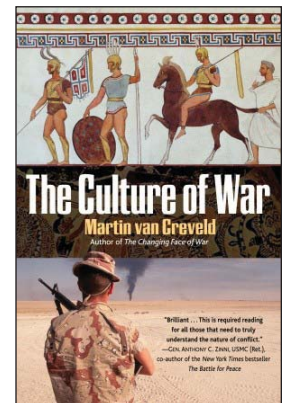
Today, he has firmly established himself as one of world's preeminent military historians and a strategist who clearly carries much clout in various circles. This reputation was built on a body of work which includes books such as *The Changing Face of War, Command in War*, and *Transformation of War*. Each of these volumes has earned recognition on numerous professional and required reading lists. They, in turn, have led to van Creveld becoming a highly sought speaker at military institutions and an invaluable consultant for many nations' defense departments. Truly, Martin van Creveld occupies special prominence today among military historians and writers and those associated with militaries throughout the world.

You expect it to focus on a subject area that most military historians would never consider or attempt to cover.

It will not take readers long to determine the focus of van Creveld's latest volume. Utilizing a quote from Clausewitz (a frequent target of his), van Creveld provides the following:

"In theory, war is simply a means to an end, a rational, if very brutal, activity intended to serve the interests of one group of people by killing, wounding, or otherwise incapacitating those who oppose that group. (Clausewitz) In reality, nothing could be further from the truth. Even economists now agree that human beings, warriors, and soldiers included, are not just machines out for gain. Facts beyond number prove that war exercises a powerful fascination in its own right — one that has its greatest impact on participants but is by no means limited to them. Fighting itself can be a source of joy, perhaps, even the greatest joy of all. Out of this fascination grew an entire culture that surrounds it and in which, in fact, it is immersed."

Utilizing the above as his thesis, van Creveld (as is his practice) exhaustively studies culture as it relates to war. During his examination, he answers in detail several key questions. These include: What is the culture of war? Why is culture important in war? Why is it important to study this culture? What would occur if there was not a culture of war? And, is it possible to have a world without war? In answering these, he touches on an eclectic array

of topics such as uniforms, drill and ceremony, education, the rules of war, and the joy of fighting. It is a book distinctive in scope and subject area.

You expect it, at times, to be controversial and to question the ideas, thoughts, and opinions of others.

For those who have read any of van Creveld's past volumes, you are well aware he is not averse to mixing it up with those he does not agree with. Beginning with his opening salvo directed at Clausewitz, *The Culture of War* contains numerous instances where van Creveld does not see "eye to eye" with others on assorted subjects. In fact, he lays the groundwork for this debate twice in his introduction when he discusses his objectives for the book.

In the first occasion, he states "… I want to put any number of "ists" – such as relativists, deconstructionists, destructivists, post-modernists, the more maudlin kind of pacifists, and feminists firmly in their place. Pace all these people, not only does such a thing as a culture of war exist, but much of it is magnificent and well worth studying."

Van Creveld continues the verbal sparring later when he exclaims, "… I want to confront the 'neorealists.' Focusing almost exclusively on information, capabilities, weapon systems, and what the editor of one well-known periodical in the field calls 'strict strategy,' all they do is prove their own inability to understand what motivates war as their unfitness to run it. By contrast, my aim is to bring back into the study of war all the vital things they, and of course their amanuensis Clausewitz, have left out of it. Thus I am taking on opponents on both sides of the political-cultural spectrum, the more sentimental kind of left and the 'hard-headed' right. But then I have always enjoyed a good fight." Clearly, van Creveld has thrown a barrage of punches. It is up to the reader to determine if they have landed.

You expect it to be exhaustively researched, cover a subject in extraordinary depth, and be filled with information you did not know before.

I found *The Culture of War* to be one of the most extensively researched books I have read. Van Creveld provides copious examples throughout history to reinforce his analysis. What makes his case even more powerful are the organizational skills he utilizes in illustrating his examples. The author systemically lays out his examples from earliest to present day. This logical flow enables the reader to first understand the development of the culture of war. Then, it allows them to truly visualize how, despite changes in technology, tactics, etc., the culture of war has remained relatively unscathed. Within this flow, readers, like me, are sure to discover dozens of "I did not know that" nuggets of information they can put in their kit bag.

Conversely, the sheer magnitude of van Creveld's research could have the opposite impact on some readers. On some points, he may provide too much detail and examples. This may set the conditions for various readers to become a bit overwhelmed. In some cases, they may find themselves questioning their own knowledge or even believing the author is "showboating" his expertise. I, personally, did not make these conclusions, but in the quest of being "fair and balanced" this could become an issue for some. Those who have read previous van Creveld efforts would expect and demand nothing less!

In the final analysis, I am convinced readers will agree van Creveld has made a worthy choice in studying the culture of war. He has crafted a volume that is without question highly interesting and unequivocally important. For those already immersed in the culture of war, van Creveld provides significant detail to broaden your understanding of this culture. To those relatively initiated with the subject, this book will answer many questions and more importantly, spark new ones. In total, it is an effort that will raise the bar even more for Martin van Creveld.

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IN THE
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