Fires
(USPS 309-010)
P.O. Box 33311
Fort Sill, OK 73503-0311

Periodicals Postage
PAID
San Bernardino, CA

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Center of Excellence

In support of the Year of the NCO, The *Fires* Bulletin will dedicate the July-August edition to Fires NCOs around the world.

PIN: 085461-000

2009 FIRE SUPPORT SEMINAR

Fires

A Joint Professional Bulletin for US Field & Air Defense Artillerymen

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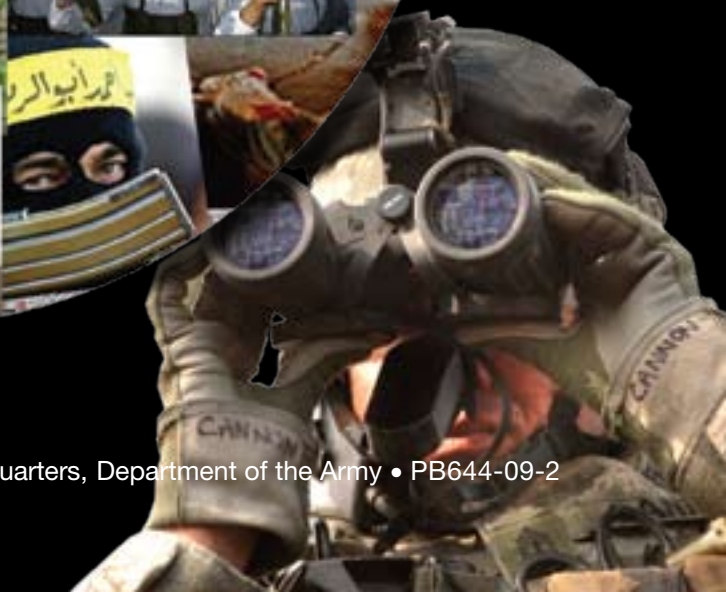
HYBRID THREAT - 21ST CENTURY FIRES CHALLENGE



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Front Cover: The *Fires* staff would like to thank Ms. Daria Dean for the design of the front cover and SSG Jerod F. Reid for the back cover.

The *Fires* staff wishes to thank RCW Communication Design, Inc., of Alexandria, Virginia, for the quality design and layout of this magazine.

POSTMASTER: ***Fires*** (USPS 309-010) (ISSN 1935-4096) is published bimonthly; periodical postage paid by Department of the Army at Lawton, OK 73501 and an additional mailing post office. Send address changes to ***Fires***, P.O. Box 33311, Fort Sill, OK 73503-0311.

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Return of the King: Israeli style

By MG Peter M. Vangjel, Chief of FA

I came across an interesting article about Israeli accounts of the battles in Gaza, Operation Cast Lead. The article outlines insights on lessons learned from the Lebanon conflict and provides us some additional thoughts on the use of scalable lethality—precision, obscuration and suppressive/shock fires in support of maneuver commanders. One thing is key: the fire supporter's relationship to his maneuver commander is absolutely critical—in combat and in peacetime training.

I think the article opens the door for further discussion with our Israeli counterparts at this year's Fire Support Seminar, and it is *very appropriate* to include in the Fire Support Seminar edition of our *Fires* Bulletin, addressing hybrid threats. Written by Sergeant Shachar Helwing, a staff writer for *Ba Yabasha* Magazine (the Israeli Defense Force [IDF] ground forces command magazine), the article is a direct translation from our Training and Doctrine Command liaison officers, and they have permission from the Israelis for Fires to release and reprint.

As always, the Field Artillery will *anticipate* the actions of any enemy we face and *integrate* all assets available to the maneuver commander—both lethal and nonlethal—enabling him to *dominate*, anytime, anywhere. Enjoy the article.

The Return of the Israeli Artillery

Soldiers and armored vehicles entering into the Gaza Strip averted casualties among our troops, mainly due to the proper use of Artillery. By echelon, starting with the Givati Brigade's Operations Center down to Battery C of the Dragon [pronounced draKon] Battalion, soldiers made sure each shell had a clear target and accurate location. In the wake of the second Lebanon War and Operation Cast Lead, we can safely declare that the Artillery is back.

The many years that separated the First and Second Lebanon Wars and the infrequent use of artillery resulted in the depreciation of the prestige of the artillery corps, and a feeling among soldiers that the [artillery] was "combat-lite." Since the Second Lebanon War, however, [this perception] has changed. [In addition to] … exercises held since the summer of 2006, in collaboration with other ground forces, Operation Cast Lead in Gaza proved again that artillery is a power to be reckoned with, and that the artillery corps has its finger on the trigger of fire power.

The Cannons Roared. Indeed the cannons roared. Ground operation[s] commenced after massive preparatory fires on the Gaza Strip that consisted of 1,500 shells, of which 500 were fired in direct support of the Givati Brigade. "The estimate of the situation … before the ground invasion compelled … [an intense] fire plan on the main roads our forces were going to use … to strike antitank positions as well as houses and tunnels that had been prepared in advance for the purpose of kidnapping soldiers," the commander of Givati's Brigade Center, Major [Maj.] Aviv, explained. "The artillery onslaught that struck booby-trapped houses and explosive charges accounts for the secondary explosions in the Gaza Strip. The enemy had not anticipated such intense fire. We struck the enemy and its munitions, but more importantly—we demoralized it, causing it to flee its positions."

Further proof of damage to morale was observed when a force headed by Givati's brigade commander arrived at a well-fortified, concrete-[reinforced] tunnel underneath a plantation. It had everything you can think of—[bullet proof] vests, rifles, RPGs [rocket-propelled grenades], an outpost for kidnapping soldiers and an electric trip wire to activate other booby-trapped houses. The only thing it didn't have was terrorists, who had fled … [due to] the artillery fire that preceded the [ground attack].

One of the most significant events for the Givati Brigade was when one of the soldiers unearthed an electric wire attached to an explosive device that surrounded a school where dozens of IDF soldiers were sleeping. Luckily for the force, the explosive charge was not activated. "There was a plan to kill the soldiers, but there was no one to execute it. This has been the most important effects of the fire [support]—making the terrorists relinquish their original plan and flee. We [renewed the old adage] … that wherever a 155-mm shell lands, nobody fires [at our troops]."

Emergency Lighting. Hamas was poised to meet an IDF invasion consisting of a division made up of several battalions. Givati Brigade forces fought against the enemy's southern Gaza brigade. During the first week, battles ensued against a battalion in the *Zeitun* neighborhood and later against a battalion in Tel Awah. Givati [Brigade] noted that the *Zeitun* battalion collapsed and did not have enough time to stage resistance as a result of the joint fire support dealt by fighter jets and the artillery.

Captain (ret.) Guy, the fire support … officer [FSO], who [returned to active duty] from Ben Gurion University to join the fighting in Gaza, conducted operation[s] from a house in which the forward war room [tactical command post] and the brigade commander were located. "We slept on the floor with the battle gear, intelligence aides and radio communications, while machinegun

gunners were deployed at the windows. During the day, the main activity was to build fortified positions, and at night raids were conducted. Together with the brigade commander, I prepared the fire plan before each operation," he relates. "Many times our basic premise was that an artillery attack, which lasts ten minutes and creates quiet, would serve us better than air support that is accurate but ends quickly."

Despite the planning, we were still talking about fighting. Givati forces, which occasionally met an ambush, [often required immediate artillery support]. In one of those incidents, the [FSO] and the brigade commander came under fire. The force had deployed in a house and continued to [receive] RPG fire during the night. "Although we did [not] identify the terrorists, we did identify the general direction the fire was coming from," the [FSO] related. "I immediately put the battery into action to fire [illumination] and smoke to mask the house; the fire stopped. When the [projectile functioned and illuminated the area], a force from Battalion *Tsabar* identified the terrorists and charged."

In another incident, an intelligence report was received that a terrorist with an improved RPG was on the lookout for Israeli tanks, waiting for the right opportunity to fire. CPT Guy [recounts], "The *Massua* system [Torch 100, a targeting system which unifies sensors, security forces and command centers into the regional security command and control system] [was utilized] for the first time, allowing us to record [and disseminate] all the potential targets around us, so I was able to immediately execute a masking plan and instruct the tanks to use their own [obscuration] devices. Shortly thereafter, the terrorist folded. [As a result of these continuous, effective fires], peoples' lives were spared."

Caution—Population in the Area. Throughout the 33 days of the Second Lebanon War, the IDF fired some 170,000 [artillery rounds]. [After Action Reports or AARs] revealed that many targets were [engaged with unobserved fires]. [In this case,] according to Maj. Aviv, there was a feeling that the mission would not start until all the forces were 100 percent ready [and observation in place]. "The fighting in Gaza is different [than that] in Lebanon, [in ground force techniques and] in terms of the artillery," Maj. Aviv continues. "[An FSO] would rather fight in Lebanon, because in a mountainous area it [is] easier to observe fires and make corrections. It is much harder to lay the battery in an urban setting where we need to watch out for the population and when the view is obstructed. The gap was compensated for by aerial video devices."

Hamas terrorists protected themselves by hiding behind civilians. The IAF [Israeli Air Force] [dropped leaflets, the IDF used verbal warnings] by Arabic-speaking infantry soldiers with bullhorns, and half a million phone calls were made to civilians in Gaza during the operation … to give them a three-hour warning….All these measures were only part of IDF attempts to avoid inflicting casualties to civilians.

For its part, the artillery corps was extremely careful, often changing the type [or numbers] of ammunition. "Before [striking] each target, [no fire areas (NFAs) were established] for buildings, with an especially large [NFAs] for medical clinics, hospitals and schools," says Maj. Aviv. "We were instructed by the division to be extra careful and pay attention to each shell before it is fired. When there was concern that civilians were in the area, we used smoke shells instead of high-explosive ones. While they wouldn't kill the enemy, at least they would block its view and ability to fire."

The combination of [illumination] and smoke is one such example. The intensity of one [round] is equal to the light produced by one million candles for two minutes. If a smoke shell is fired close by, [the reflected light] creates a blinding effect that prevents the enemy from shooting at us. "The point of impact of such a shell is important," says Captain Guy. "If the illumination [is fired] too close to our forces, it will create the reverse effect, exposing our own troops."

When the fighting ended, Captain Guy was promoted [due to the chain-of-command's] satisfaction with the artillery [support he provided]. Even before [lessons learned] from Operation Cast Lead [were written], the outstanding [FSO] remarked that "this time the artillery was much more effective, [evidenced by the fact] there were no fatalities among Givati Brigade soldiers. Much credit is [due to] *Rochev Shamayim* [Sky Rider is an unmanned aerial vehicle which is an invaluable observation platform in dense or urban areas].

Fire Dragon. Charlie Battery of the Dragon Battalion was in [direct support to] the Givati Brigade throughout the operation. [At face value, it would seem] its soldiers enjoyed [less stressful] fighting conditions, [because] they fired from within Israel. [However,] the battery commander, Captain Idan [asserts] that this kind of situation creates an additional challenge for the soldiers. "In less than [18] hours, we fired almost 500 rounds in support of the brigade [which is quite physically challenging]. [Additionally] because our soldiers do not see the enemy [directly], it [is] sometimes harder. I always made sure they knew exactly what [the purpose of each fire] mission was. I informed [my platoon leaders] on the radio where they were [firing], who they were assisting, and how many lives they would be saving if they performed well."

Givati brigade commander Colonel Ilan Malka made sure to stay in direct [communication] with the battery, and during the fighting the [FSO] tried to visit the battery frequently to give the soldiers an updated view of the fighting in the Gaza Strip. "As a commander in the battalion even before the Second Lebanon War, for me it was like coming a full circle to see the shelling and to know that Dragon soldiers were behind them. Because I knew that they oftentimes felt out of the loop, I made sure to update them."

"Being made to feel involved in the battle, the soldiers unequivocally realized that if they were not accurate, they would compromise IDF soldiers," says Captain Idan. "One of our soldiers was injured when a [round] fell on his foot [and had to be evacuated]. When he arrived at the hospital, he met two wounded soldiers who thanked him on behalf of the forward forces for saving their lives time after time."

Revving Up the Engines. Although the current operation did not require us to follow the maneuvering forces, the battery is confident that it can meet more difficult challenges if called to conventional war. Captain Idan remarked, "We [are] more than just continuous fire. In case of an all-out war, we will also have to deal with [position defense and directly engaging the enemy], while [simultaneously] managing [direct support to ground forces]. As far as this operation is concerned, we were just revving up the engines."

The forward war room [tactical command post] did not remain indifferent in view of the battery's operational capability. "After many years of service in the IDF, I can say that there are hardly any operational points in which you know for a fact that you saved the lives of other soldiers," says Maj. Aviv. "This time, thanks to the quick and perfect performance of this battery, it was literally that. Anyone who was there was moved [by their performance]."

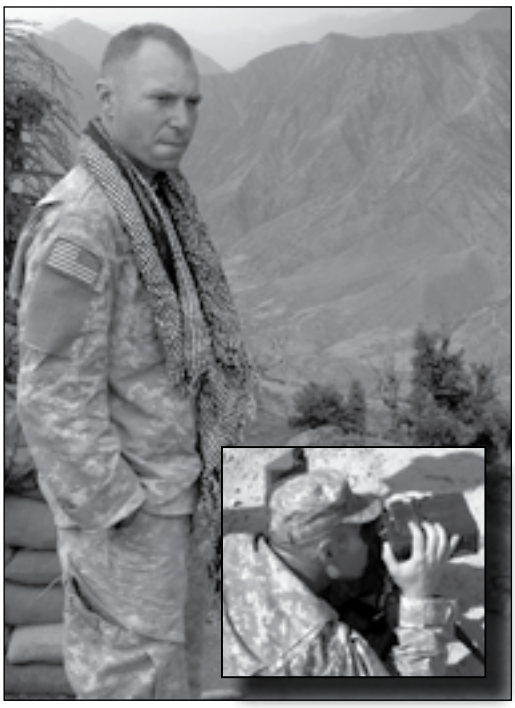
SFC Jared C. Monti—A Redleg Hero

Our Army has had many great leaders throughout the years, and every one of them have two things in common—the Soldiers and NCOs within their ranks. NCOs are relied upon to accomplish the Army mission. To recognize these vital NCO Corps contributions, the Army declared 2009 as the "Year of the NCO."

In Command Sergeant Major (CSM), Retired, Daniel Elder's article *Remarkable Sergeants: Ten Vignettes of Noteworthy NCOs*, he identifies 10 NCOs who impacted the Army in some fashion. Many have not even heard of most of them. The periods that they served range from the Revolutionary War to Vietnam. I encourage you to go to **http://www.ncohistory.com** and read CSM Elder's articles.

Since the moment 2009 was declared the "Year of the NCO," the Army planned numerous ways to celebrate its NCO's accomplishments. One way Fort Sill, Oklahoma, is recognizing NCO accomplishments is to dedicate our new call-for-fire training facility to an NCO killed in action in Afghanistan.

Sergeant First Class (SFC) Jared C. Monti, a Military Occupational Specialty 13F Fire Support Specialist, was a Targeting NCO assigned to Headquarters and Headquarters Troop, 3rd Squadron, 71st Cavalry, 10th Mountain Division, Fort Drum, New York. He distinguished himself by acts of conspicuous gallantry above and beyond the call of duty against an armed enemy in Gowardesh, Nuristan Province, Afghanistan.



SFC Jared C. Monti stands outside his bunker during personal time while deployed to Afghanistan in support of Operation Enduring Freedom. **Inset:** SFC Monti, a Military Occupational Specialty 13F Fire Support Specialist, uses the MkVII Laser Rangefinder before moving out on patrol in Afghanistan.

On 21 June 2006, SFC Monti, then a staff sergeant, was the assistant patrol leader for a 16-man patrol tasked to conduct surveillance in the Gowardesh region. The patrol was to provide up-to-date intelligence, interdict enemy movement and ensure early warning for the squadron's main effort as it inserted into the province.

As nightfall approached, the patrol was attacked by a well organized enemy force of at least 60 personnel. Outnumbered four-to-one, SFC Monti's patrol was in serious danger of being overrun.

The enemy fighters had established two support-by-fire positions directly above the patrol in a densely wooded ridgeline. SFC Monti immediately returned fire and ordered the patrol to seek cover and return fire. He then reached for his radio headset and calmly initiated calls for indirect fire and close air support (CAS), both danger-close to the patrol's position. He did this while simultaneously directing the patrol's fires.

When SFC Monti realized that a member of the patrol, Private First Class (PFC) Brian J. Bradbury, was critically wounded and exposed 10 meters from cover, without regard for his personal safety, he advanced through enemy fire to within three feet of PFC Bradbury's position. But he was forced back by intense RPG fire. He tried again to secure PFC Bradbury, but he was forced to stay in place again as the enemy intensified its fires.

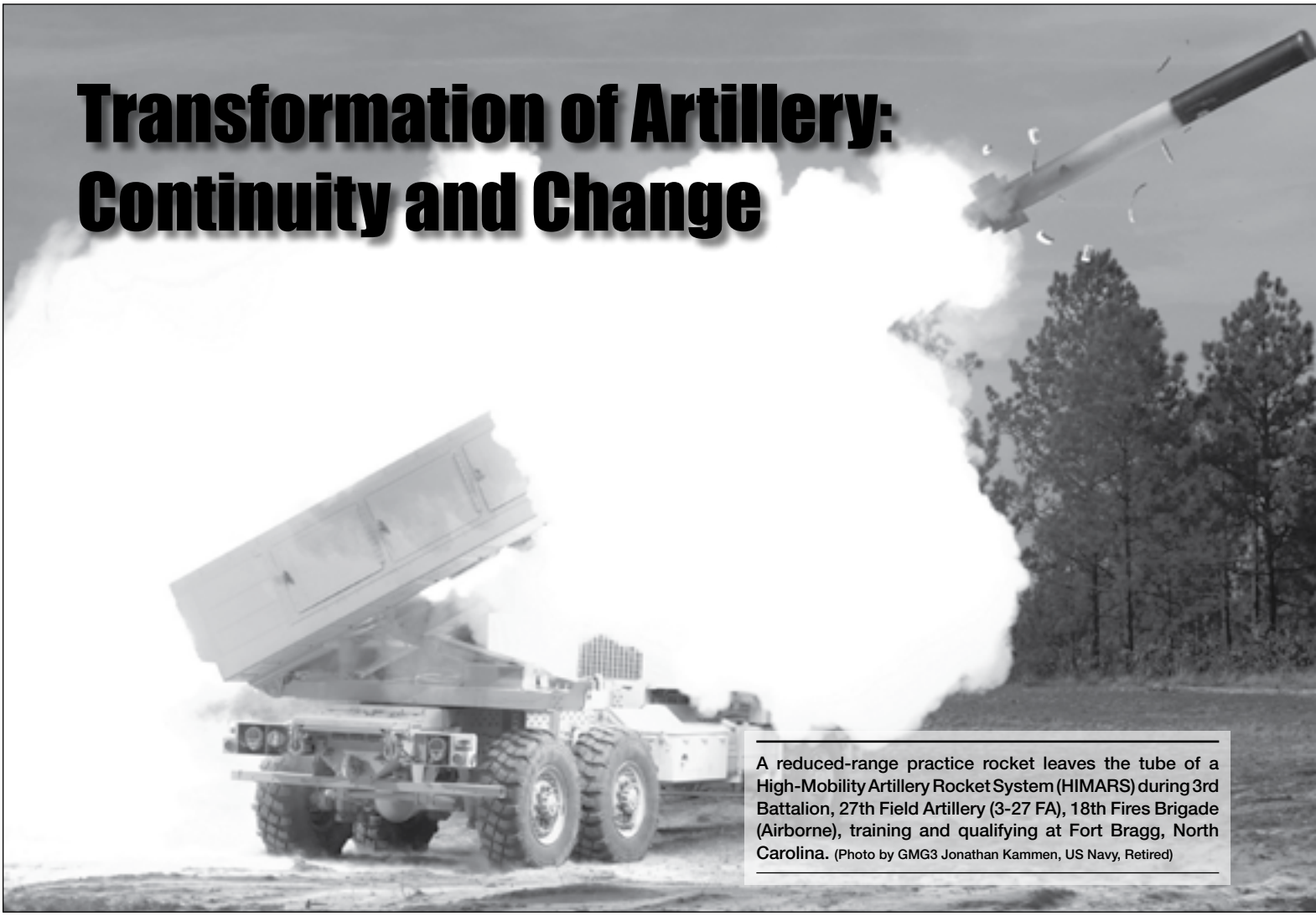
The remaining patrol members coordinated covering fires for SFC Monti, and he advanced a third time toward the wounded Soldier. But he only took a few steps this time before he was mortally wounded by an RPG. About the same time, the indirect fires and CAS he called for began raining down on the enemy's position. The firepower broke the enemy attack, killing 22 enemy fighters. SFC Monti's actions prevented the patrol's position from being overrun, saved his team's lives and inspired his men to fight on against overwhelming odds.

SFC Monti epitomizes what it means to be an NCO. Because of his personal sacrifice and selfless service to the Army, the men of his patrol are alive today and continue the fight.

SFC Monti's name will adorn our new Fort Sill Call for Fire Training Center. The "Monti Call for Fire Training Facility" will be used to train future joint fires observers. Sudents will be trained on jointly approved tactics, techniques and procedures in support of Artillery, Naval Surface Fire Support and Aviation. Upon graduation, the students will take with them the knowledge, skills and inspiration the Monti Call for Fire Training Facility provided to fight effectively and win on today's modern battlefield.

The Department of the Army has given us an outstanding opportunity this year to showcase our NCOs. By looking at what great leaders have done in the past and present, we learn "what right looks like." Through the continuing transformation of the NCO Education System (NCOES), focusing on physical and mental fitness, and celebrating the diversity within our ranks, we will ensure that the "Backbone of the Army" continues to lead the way.

Transformation of Artillery: Continuity and Change



A reduced-range practice rocket leaves the tube of a High-Mobility Artillery Rocket System (HIMARS) during 3rd Battalion, 27th Field Artillery (3-27 FA), 18th Fires Brigade (Airborne), training and qualifying at Fort Bragg, North Carolina. (Photo by GMG3 Jonathan Kammen, US Navy, Retired)

... and the lady seated next to Mr. Churchill said: "Mister Prime Minister, you are disgustingly drunk." And Winston Churchill replied, "Yes lady, you are right. I am drunk, and you are ugly. But tomorrow morning I will be sober."

By LTG Wilson A. Shoffner, Retired

When dealing with any transformation, some things change and some stay the same. Will it be done with wisdom to recognize what should not be changed and with the fortitude to deal with that which must change? This is the challenge facing the Artillery as it goes thru major transformation in the post-Cold War era. The purpose of this article is to address that challenge.

In this post-Cold War period, a radical change in the nature of the threat has claimed the attention of most free countries. Today, we are engaged in the War on Terrorism (WOT). The Army must be transformed to deal with emerging threats around the world while it is conducting WOT—not an easy job. Artillery transformation began from a posture with programs and structures designed for a very different enemy than we now face.

The Cold War threat was a massive, complex structure that outnumbered and outgunned allied forces. For the Artillery, it was particularly challenging with enemy artillery numerical advantages of five to one and sometimes as high as nine to one—that sets the starting point for Artillery transformation. Following are my thoughts on how this transformation is proceeding. To keep it simple and focused, I will give you "Three Ups and Three Downs;" the three things that are going well and must be sustained and the three things that are not going well and should be corrected.

Up Number One—Flatten Command and Control (C^2). Flatten C^2? As the proverbial saying goes, "When the captain said to flatten C^2 what did he mean?" "He means that if someone in a fight in his area of operations (AO) needs something that is available within his AO, he ought to get what he needs when and where he needs it. That is what the Captain said." Wow, that is a big deal, and not easy; but, what a remarkable capability that would be.

The complicated C^2 system connecting the many different parts must be "flattened" as a set, to ensure operational and technical connectivity demanded. In Thomas Friedman's book, *The World Is Flat*, he points to the impact of the global Internet on business, where information is shuttled around the world at the speed-of-light for a variety of business transactions. If the multinational mercantile guilds can achieve interoperable global networks with unique currency and language systems, then one should expect some headway for joint and coalition commands.

The truth of the matter is that remarkable progress has been/is being made to flatten C^2 within a theater of operations. Just as the need to associate guns and targets on a "common grid," so that any

gun within range can be brought to bear, was recognized by the prescient General Leslie J. McNair before WWII; today, the Artillery has recognized its new challenge and again is leading the way. With the advent of Global Positioning System (GPS), networking and satellite communications, we can see the remarkable benefits of what is emerging as a "joint common grid". General McNair would be pleased to see contemporary gunners expanding his original concept to that notion. Realization of the power of a "joint common grid" on a joint and Coalition battlefield is much more significant than any other development in the Army. Some of the work being done to flatten C^2 and achieve the joint common grid is highlighted below.

Joint Fires Instruction. At Fort Sill, Oklahoma, you find two new courses of instruction on the business of integrating joint Fires. One is the Joint Operational Fires and Effects Course (JOFEC) that covers the skills, techniques and procedures needed for effective planning and application of joint Fires. The second is the Joint Fires Observer (JFO) Course. Observers are trained to call in targets to a variety of fire assets.

This is the prompt institutional response to battlefield lessons learned that will be required to "flatten C^2." It is also a giant step forward in integrating joint Fires and maneuver forces. In fact, JFO Course-qualified FOs and fire support NCOs now are deployed to Iraq and Afghanistan and putting their new skills to work every day.

Changes in Tactics, Techniques and Procedures (TTPs). Excellent progress is being made to flatten C^2 through revision to TTPs. Remarkable examples have come from combat experiences in Afghanistan and Iraq, and TTPs are being updated to capture them. TTPs are being updated to capture lessons from the field so that they can be taught in the schoolhouse, reflected in revisions to doctrinal publications and practiced at combat training centers.

Recent examples of such TTPs are from the Battle of Fallujah, where Task Force 2-2 Infantry Battalion Fire Support Element (FSE) operated as a mini-brigade FSE. The FSE coordinated the effects of Army, Air Force and Marine assets more autonomously than the traditional doctrinal battalion-level FSE—a model of joint interdependency and flattened C^2. Mortars of 2-2 Infantry were an integral part of indirect fires; danger-close missions were the rule with l55-mm and l20-mm fires often within 200 meters of friendlies.

Organizations—Fires Battalions and Fires Brigades. Similarly, combat experiences are being reflected in the redesign of Army force structure with adaptive, modular units. Most significant are the brigade combat teams (BCTs) and Fires brigades. BCTs are the center piece of the ongoing modularity reformation. Within the BCT, the previous direct-support Artillery battalion has been made organic to a BCT as its Fires battalion. This preserves habitual association of the fire support team with maneuver counterparts, so critical to integrating fires effectively with maneuver. Additional sensors and communications were added to streamline the FA battalion's responsiveness.

At echelons above the BCT, Fires brigades have been formed with the capabilities for providing fires at depth, and for close support. Fires brigades have organic necessary means, such as sensors and communications, to link the planners directly with the shooters.

Up Number Two—Concept of Fires. The concept for Fires is being updated. In its most basic form, battle is all about orchestration of maneuver forces and fires to close with and destroy the enemy. For fires to be effective, they must be integrated closely with maneuver forces at the required time and place—not an easy task.

Today's battlefield construct is no longer an array of large combat formations. Rather, large areas are not occupied by contiguous forces, and battles may be occurring simultaneously in several different areas throughout an AO. There is little distinction between rear and deep battles. Targets appear any place within the AO. Today's tempo is often greater.

Combat operations may be in one sector while stability operations are in another. Clearance of fires is more complex in contemporary operations. In today's environment, we see an increasing number of time sensitive, high-payoff and point targets (some of them hard). Where fights do occur, it still remains a close-battle problem of fires and maneuver. To capture these changes, a new concept of fires has emerged.

Fires Concept—Close and Deep. Today's battlefield yields two classes of fires: 1) close support fires and 2) fires at depth. Thinking of fires in these two forms simplifies the concept. The notion of counterfire could be either close or deep. In both classes of fire, considerations for unwanted collateral effects are greater than before.

Thinking of fires as either outgoing or incoming further clarifies the challenge of integrating Air Defense Artillery (ADA) and Field Artillery (FA). At a recent seminar at Fort Sill, the Commandant of the Field Artillery School articulated his concept of fires and introduced the Virtual Center of Excellence for Fires. It is imperative to get the concept about fires right before tackling the sticky organizational issues. Establishing this integrated concept as a preamble to physically moving personnel and functions to collocate ADA and FA Schools is a smart idea.

The proposition to begin thinking of Fires as Fires, and not as ADA fires or FA fires, is the right move. Conceptually, they have the same focus. Fires are Fires; whether for close support, at depth or to deny incoming fires (from whatever source). The concept of Fires is all related to supporting the force commander and protecting the force.

Simplifying the Battlefield. Long range precision fires, immediately available 24/7, are an example of simplifying the battlefield. Planning, coordinating and executing long-range fires is a much simpler task than other alternatives for fires at depth. Coverage of several battles in various directions is not a challenge with the longer-range, precision weapons. Precision fires have proved invaluable in counterinsurgency operations where clearance of fires is particularly difficult. Long-range fires organic to formations are not limited by problems of weather, sortie generation, attrition rates, flying hours, on station time or mid-air refueling.

Counter-Rocket, -Artillery and -Mortars (C-RAM). Perhaps the best example of the new concept of fires is the work being done on the program known as: C-RAM. This initiative integrates Air Defense, sensor, communication, C^2, FA and intelligence functions into one package. It smoothly provides the ability to kill not only the incoming arrows, but the archer who shot them as well and to provide a warning to those who may be in an impact area.

C-RAM now is being fielded to combat AOs as the capability continues to be further refined and deployed. Following a traditional approach for developing this capability would have taken decades; but the forward thinking leaders driving this initiative are breaking new ground on the way to develop, acquire and field new combat capabilities. They are doing the smart, right thing.

Up Number Three—Integration of Fires and Maneuver. My third Up is the remarkable improvements in the integration of Fires and Maneuver.

Special Operating Forces (SOF). Sensitivity to specific examples precludes elaboration in this article; but, suffice it to say, there are field experiences of improving the integration of Fires, especially precision fires, with SOF that are very encouraging. One must be especially pleased with the use of long-range, precision fires and the capabilities of High-Mobility Artillery Rocket System (HIMARS) to support SOF. The mobility of HIMARS and the advantages of its long-range, precision munitions have been recognized and cleverly employed by SOF.

BCTs. The formation of the BCTs is a great step forward in integrating Fires and Maneuver. Transitioning the direct support battalions of Div Artys to organic Fires battalions of the BCT cements that capability. Moreover, the integration of sensors and enhanced communications into the Fires battalion further streamlines the close-support fires organization and enhances integration.

Fire Support Elements (FSEs) and Fires Brigades. Reorganizing Artillery to deal with the new strategic environment has resulted in accepting the risk of eliminating Div Arty and corps Artillery organizations. The critical need to include planning, coordination and integration of Fires with maneuver at echelons above brigade has been enhanced with the colonel and brigadier positions for FSEs at division and corps. These are important measures to assure proper integration for Fires at depth.

Similarly, Fires brigades now being formed have ,organic, the required sensor and communications means to streamline finding and executing time sensitive targets at depth. Personally, I think this may prove to be the smart decision in the long run. This action in Artillery transformation powers-down and places greater responsibility on leaders at lower levels. Fortunately, equipment needed for C^2 of the new structures is being provided as well. Leaders in the field are demonstrating they have the capabilities to make this a good decision.

Members of C Battery, 1-321 FA, 18th Fires Brigade (Airborne), fire the M777 howitzer at Forward Operating Base Bostick, Afghanistan, 17 March. (Photo by SGT Matthew Moeller)

Down Number One—Leader Development is Unhinged. There is a critical problem associated with leader development. With the elimination of the divisional Artillery commands, the progressive assignment for successful FA battalion commanders is unhinged. Failure to provide progressive and sequential assignments adversely impacts leader development.

Analysis of Fiscal Year 2005 (FY05) Command Selections. The most recent command selections for FY05 illustrate the problem. From the data, one discerns significant differences in the opportunity for command of tactical units at the colonel level. Army average for opportunity to command is reasonable, but differences between combat arms are of concern: Infantry is 50 percent, Armor is 25 percent and FA is 8 percent. Differences in opportunity to command a tactical brigade by these margins will be perceived as an unfairness that portends major retention challenges of successful FA battalion commanders.

An "Equal Opportunity" Solution. A solution would be to provide opportunities for FA colonels to compete for selection to command combined arms brigades. Designating commanders of Infantry, Armor and FA brigades as "combined arms brigade commanders" is the first step. This would provide for successful commanders of Infantry, Armor and Field Artillery battalions to compete equally for brigade command—each with a 30 percent opportunity.

With a current Army average of 28 percent, an equal opportunity among Infantry, Armor and FA battalion commanders of 30 percent would rectify a significant imbalance in the opportunity to compete and continue to serve at the senior levels. Appropriate guidance to the FY06 Selection Boards could correct this problem. *Editor's Note: Subsequent to this article's writing, the US Army Chief of Staff announced a policy change that allows FA colonels (and selects) to compete for BCT commands.*

Down Number Two—Failure to Emphasize the Urgent Need to Lighten the Force. The second Down is an urgent need for modernizing fires for light forces

and an overall need to lighten the entire force. The Army is moving out smartly to modularize fighting forces and is making progress. There is also investment to develop a Future Combat System.

But what is missing in both of these initiatives is emphasis to reduce the logistics tail, lighten the entire force and reduce the cost of ownership. What fraction of the US Army's total budget goes to logisticians and their processes? What fraction of strategic lift goes for tail, what fraction for tooth? A historic number of trigger-pullers to supporters has been one to seven; what is it today? What should it be? These are relevant questions.

Cost of ownership is growing because of the cost of manpower. In time, the manpower intensive tail will begin consuming the tooth if this growth is not stopped. Why continue to support massive logistics tails without understanding their true costs and implications? This is an Army problem, not just an Artillery matter. We must insist on working the complete picture to lighten the force and reduce the cost of ownership.

Fires for Light Forces. For the Artillery, there is a critical need to lighten the Fires component for light forces. Serious thought needs to be given to affordable precision mortars (affordable is defined as $1,500 per round in lots of 100,000; not $100,000 per round in lots of 1,500). The 120-mm mortars are inherently flexible, very effective, easily transported and the least costly in terms of resupply effort. Precise munitions lighten the logistics tail and enhance agility of the force.

Additionally, it is time for a new, modern howitzer for light forces. These troops have the greatest likelihood of being deployed early. Why not put our highest priorities on properly equipping them with affordable, precise mortars and munitions and the urgent development of a modern light howitzer?

Reduce the Ammo Logistics Tail. The large, complex logistics tail of the Army is a critical concern and adversely impacts Artillery. Long-range, precise rockets and missiles help because of their long range, precision, ability to shift rapidly and inherent 24/7 availability—more affordable solutions would increase their benefit. These weapons significantly lighten logistic burdens.

Further, their cost of ownership, strategic lift and manpower costs of long-range precision fires are minimal compared to alternatives. Compare total life-cycle costs of owning a HIMARS unit with owning a slice of an Air Wing with equal effectiveness—there is an enormous saving for the nation.

Reduced Cost of Ownership. Major initiatives to reduce the costs associated with owning the Army's equipment are sorely needed. This matter is bigger than just the Artillery. Any development or procurement should have the cost of ownership spelled out before a decision is made to accept the system. Today, we do not have the means to see and control these costs of ownership.

Most modern successful businesses set their costs for general and administrative expenses at something less than 12 to 15 percent. By my approximations, the Army's general and administrative costs are more than 60 percent. A no-nonsense look is sorely needed at the Army's true operating costs, both peace and war times, and a modern plan for controlling them.

To compare the cost of the Army's logistics operations with a modern company of comparable scope, I have compared my estimate of the cost of Army's spare parts operations with that of Caterpillar Logistics, which supports a fleet of equipment of comparable size to the Army. The costs of Caterpillar Logistics suggest they are accomplishing a mission of similiar scope at less than one-tenth the cost of the Army's and with responsiveness standards far superior to the Army's.

Moreover, the Army's costs will continue to grow because of manpower content and the extensive costs to recover from recent combat operations. This growing operations and support cost of the Army will continue to demand payment at the expense of investment accounts for future capabilities. Estimates that I have calculated would suggest that if things continue unchecked, the investment accounts will disappear by 2019 because of the burgeoning operations and support costs.

Down Number Three—Ossified Development and Acquisition Apparatuses. The third problem is focused on the means for development and acquisition of future capabilities. This, too, is an Army-wide problem, not just an Artillery matter. During the Cold War, extensive effort was placed to achieve the greatest performance. The supporting scenarios, analyses and algorithms represented attrition warfare between large formations. For that problem, these tools served us well. But today, they are not relevant, and their use can lead to improper conclusions.

Similarly, the concept-based requirements system required projections of threat and technology well beyond the next decade. And the material development, testing and acquisition processes supporting the requirements system become extensive, expensive and burdensome. These massive apparatuses for development and acquisition, which took decades to develop, are not relevant today—they must be abandoned as soon as possible.

The ideas underlying transformation are forward looking, but the apparatuses for development and acquiring the capabilities are backward thinking. We can no longer afford to wait 17 years from concept formulation to fielding.

Soldiers from A/2-320 FA, 1st Brigade Combat Team (BCT), 101st Airborne Division, fire rounds from their M119A2 howitzer at enemy targets in Iraq, 13 January 2008. The Army reformation put Artillery units in BCTs, giving maneuver commanders direct command and control of Artillery rocket and missile fires. (Photo by 1LT Jonathan J. Springer)

A M109A6 Paladin self-propelled 155-mm howitzer fires a round on Forward Operating Base Warrior, Kirkuk, Iraq, 13 February. This is the first time this particular Paladin has been fired in Iraq, and it is being calibrated to ensure it can hit its target every time. (Photo by PVT Justin Naylor, 2nd Brigade Combat Team, 1st Cavalry Division Public Affairs)

Much of tomorrow's technology will be obsolesced within that 17-year period. Gaining the future combat capabilities is not limited by technology or funding, but by our wrong-headed processes and decision making schemes.

The path ahead. My proposition is simple but difficult—completely discard the current development and acquisition systems. The first step is to establish a small board empowered to perform triage on the current programs and salvage those few that are relevant and can be fielded within three to five years. Terminate the remainder, accept the loss and reset the entire process of developing capabilities and acquiring materiel. It is time to reboot the entire process.

Back to Basics. Go back and reexamine the excellent roots from where the processes originated. They started from sound propositions and were initially fairly responsive. The Army needs to reset the fundamental operations analyses with relevant scenarios, redefine the analytic and war-gaming algorithms and establish legitimate battle labs properly resourced and instrumented with modern capabilities.

Because the fundamental elements of battle are fire and maneuver, we need two primary, properly resourced battle labs—one for Maneuver and one for Fires. The two could operate in a virtual battlespace to examine integrated combined arms issues. A third overarching laboratory for integrating command, control, communications and intelligence (C^3I) should then be established as part of the Combined Arms Center, Fort Leavenworth, Kansas.

Using modern technologies and distance-learning techniques, these battle labs could run virtual and live experiments and, in a timely manner, generate the necessary intellectual, analytic and technical underpinning for capabilities-based developments. Further, in this new model, the senior Army leadership should make the Chiefs of Fires and Maneuver the service acquisition authorities. Modern, competent battle labs with decentralized acquisition authorities could bring modern capabilities to the field before the technology is obsolete.

Leverage Modern Tools and Procedures. Many of the old tools and processes should be scrapped. New simulation, development and testing processes with embedded Six-Sigma concepts can reduce testing significantly and provide remarkable improvements in production time and costs as well as reduction of operating and ownership costs. The performances being seen in all walks of industry today bear witness to these facts.

There are a few, piece-wise pockets of excellence within Army Material Command, but a holistic Army-wide initiative is needed. One can only hope that the senior stewards of the Army no longer will tolerate incompetent processes and organizations, while being fully aware of the remarkable capabilities within industry around the globe. If they can demonstrate the fortitude, we then will see some hard-nosed programmatic triage followed by bold, courageous reformation of the ossified processes—while on their watch. It is incomprehensible that in this third millennium we should take 15 to 17 years before fielding modern capabilities.

The Artillery is at a crossroads and faces choices of historic consequence. An opportunity of this magnitude comes along ever so seldom. The good news is that those responsible have selected the correct path(s), are making good headway and getting some things right.

The collocating of the two Branches again is the right thing to do. The joint common grid is the largest combat multiplier of this era, and the progress in integrating Fires and Maneuver will enhance combat operations. Hopefully, wisdom and common sense will prevail, and the leader development glitch soon will be resolved fairly.

But the bad news is that if there is not a major Army-wide initiative in the near term to reduce the growing cost of ownership and massive logistic tails, none of this good work will matter. The Army's tooth-to-tail ratio will dwindle to a small fraction as the tail continues to grow unchecked. If our senior stewards can muster the fortitude to leverage what is already available, demonstrate wisdom in programmatic triage and empower bold reformation of ossified processes, then our Soldiers will have only the finest combat capabilities our country is paying for.

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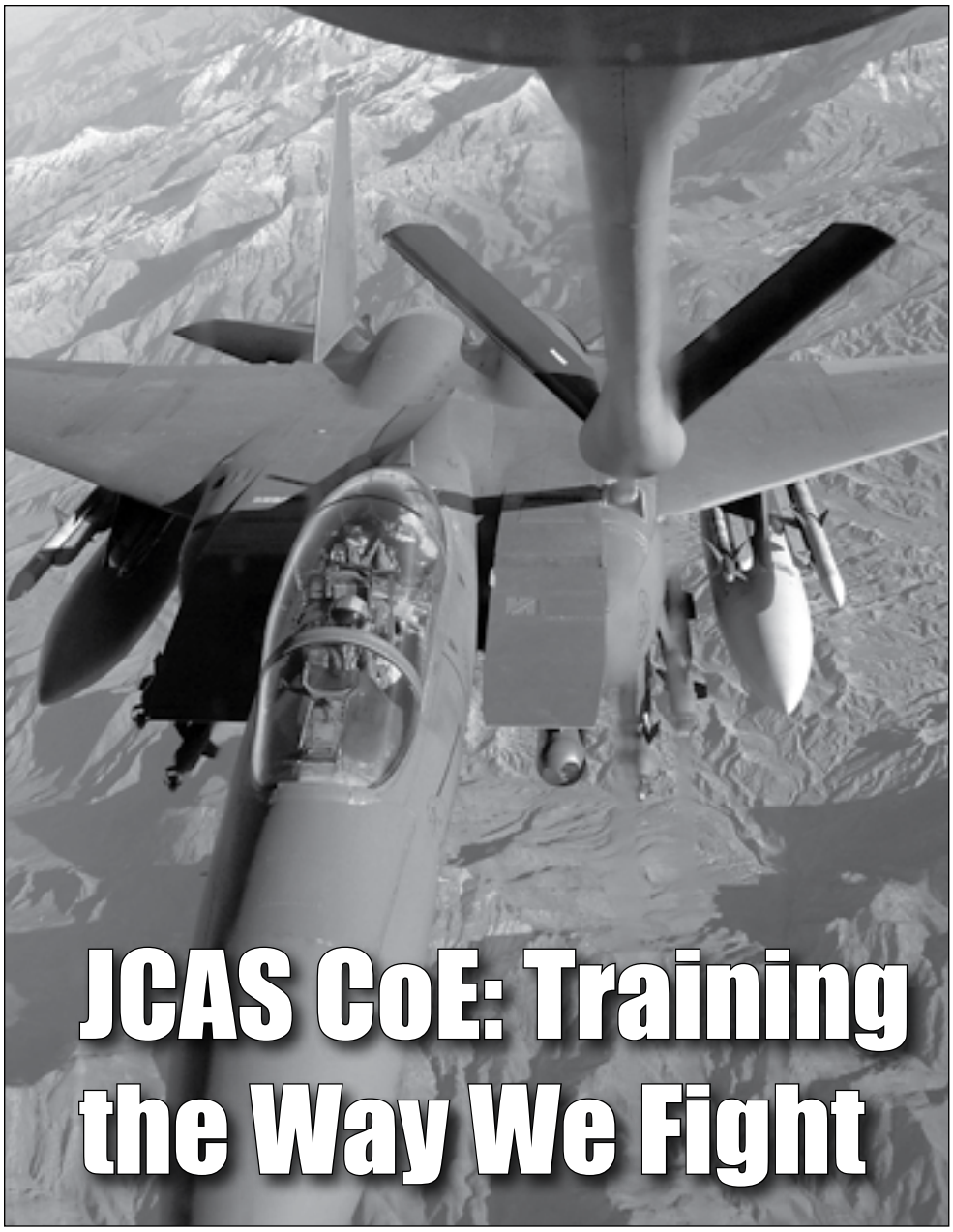
Edited for Fires *style and format, this article is a reprint from the Autumn 2006 edition of* RUSI Defence Systems.



JCAS CoE: Training the Way We Fight

This KC-135 is aerial refueling an F-15E over the southwest US. Combining aerial refueling taught at Altus Air Force Base, Oklahoma, and Air Force (AF) fighters supporting the Joint Fires Observer Course at the Fires Center of Excellence, Fort Sill, Oklahoma, doubles the training for each at no additional cost. (Photo courtesy of USAF)

By COL Billy F. Sprayberry, FA, and LtCol Alan L. Shafer, USAF

Full-spectrum dominance in today's Era of Persistent Conflict is achieved only by operating as a joint force. A joint approach generates the ability to conduct offensive, defensive and stability operations and employ lethal and nonlethal capabilities in the air, on land and at sea; plus simultaneously allows integration of information operations and cyberspace. To generate this joint capability, we must train the way we fight—as a joint force.

Today's military has numerous training centers focused on joint Warfighter training. Three prominent centers immediately come to mind when thinking of joint fires training: National Training Center at Fort Irwin, California, the Joint Readiness Training Center at Fort Polk, Louisiana, and the Air Warfare Center at Nellis Air Force Base (AFB), Nevada.

While home-station training is focused primarily on individual service mission essential tasks, organizations do discuss the joint fight and eagerly await the opportunity for a training rotation at a training center where joint operations and assets can be applied. When fighting a war, however, those joint training opportunities occur all too infrequently. After those training opportunities are completed and after-action reports complied, we gather lessons learned and return to home station to train at the service level again. While we clearly provide our Warfighters excellent joint training, there may be more options.

Is excellent joint Warfighter training the same as training excellent joint Warfighters? Our current joint force training model is to bring service Warfighters together for a relatively short period of time while trying to build this joint team in the field. While this adds value, does it train and develop exceptional joint Warfighters? Do these few days teach us about each other's culture or increase our understanding of joint warfare? Do these few precious days teach us the best ways to use each others' strengths, address any weaknesses, and teach how to blend into a joint force?

Joint Training. Joint Warfighter training focuses on the service units blending into a team for a training event for a short period of time, while training joint Warfighters should be a life-long endeavor. Each Service strives to teach and train as a joint force from cradle to grave. Each Service pursues every opportunity to "train the way we fight," for every training event throughout a career.

This is not advocating a reversal of the unique Service roles and responsibilities, but rather it is recognizing that specifically the Army and Air Force (USAF) missions, although different, are connected. According to General Norton Schwartz, Chief of Staff, US Air Force (CSAF), "Enhance AF support to joint operations with a specific emphasis on air-ground integration and ISR [intelligence, surveillance and reconnaissance] … exquisite support of joint partners does not diminish us… organize in a way that promotes trust and builds lasting professional relationships" (See "DoD Buzz" *Online Defense and Acquisition Journal*, dated 13 August 2008).

It is practicing jointness until it's natural. Both Services should commit to produce a joint endeavor to create joint Warfighters at every opportunity. While committed to building a framework for the development of joint Warfighters, the Fires Center of Excellence (CoE), Fort Sill, Oklahoma, has embarked on a Joint Fires University vision that seeks to make this a reality.

While a Joint Fires University is a vision for life-long education, the Services

need to begin with a change in how we conduct the business of training. While both Services seek training venues where Soldiers and Airmen can train as a joint team, they have a paucity of opportunities. However, leveraging existing installations' capabilities to support expanded joint training opportunities is not only possible, but necessary; and both Services should exploit at every opportunity.

Joint force operational requirements today clearly demonstrate we should train more often as a joint force. Unfortunately, not every Army post or Air Force base has its sister service stationed in such a way to facilitate this training. But there is the potential for a Joint Force Training Center dedicated to producing joint Warfighters in southwest Oklahoma and north Texas.

The Fires CoE at Fort Sill, the 80th Flying Training Wing at Sheppard AFB, Texas, and 97th Airlift Wing at Altus AFB, Oklahoma, are uniquely located to create a "triangle" of organizations to aid each other in their current training missions and to begin creating joint training venues that would enhance their own unique training and create durable, available joint training opportunities.

This proposal to work more closely among these facilities is a step beyond the current agreements the three installations have in effect today. The three installations and two Services have signed two Letters of Agreement (LOAs) that are in effect and two Inter-Service Support Agreements (ISSAs). There are three more pending agreements being negotiated and awaiting the final disposition of the Army Radar Approach Control (ARAC) at Fort Sill.

These agreements focus on service training and provide the framework for the individual installations to work their own training requirements with limited usage of each other's capabilities. These agreements only scratch the surface of the potential that can be realized. By looking at each other's training requirements and seeking those joint training opportunities, mutually supported joint training could be realized with little to no requirement for any increase in resources. Developing an overarching LOA that incorporates current existing LOAs and ISSAs would provide the framework for creating the joint training opportunities to support the installations' missions.

Joint Close Air Support (JCAS) CoE. The potential to expand this core triangle out to a "circle" of installations within range to conduct daily training of the initial triangle agreement creates significant joint training opportunities. Coupling Tinker AFB's organic Airborne Warning and Control System (AWACS) aircraft's ability to provide command and control with Fort Sill's organic air defense systems enables nearly every aspect of the Theater Air Control System (TACS) and Army Air-Ground System (AAGS) at one location for joint training every day. A list of installations in close proximity to Fort Sill that would reap joint and total force benefits from a JCAS CoE joint training center are listed in the figure.

Key to this training opportunity is 2,000 square miles of airspace under one common operating picture (COP) within the joint training triad of Altus AFB, Sheppard AFB and Fort Sill. Adding the collective ranges, airspace and airfields will create a user-friendly training environment with such a diverse scope of capabilities that it easily will become the most desired training center available to our joint forces. The concept of a JCAS CoE could be developed with minimal impact to the individual installation missions and, in fact, would enhance each facility's training opportunities. This joint training triad will foster "training the way we fight—as a joint force" and support the joint operational concepts expressed in the National Military Strategy.

Benefits. Immediate benefits would be reaped by the three installations and their current training missions. As an example, allowing F-16s from the Oklahoma Air National Guard (OKANG) to land at Altus AFB after their first sorties above the ranges of Fort Sill to refuel and arm with live weapons derives the following multiple benefits.

First, the OKANG aircraft flying from Altus is allowed to drop live weapons—something it is prohibited from doing by Tulsa International Airport joint-use airfield restrictions. This is important as its home airfield restrictions make it very difficult for the unit to use its allocation of weapons for training and aircrew currencies.

Next, Altus AFB will benefit from the opportunity to air refuel these F-16s while the aircraft are working the ranges at Fort Sill. Currently, the tanker training at Altus AFB refuels nearly all C-17 aircraft that lie within its span of control. Refueling fighters presents a different set of issues for the tanker trainees and increases student training opportunities.

When the F-16s refuel during the sorties, the added fuel will increase their

Installation	Aircraft Type
Oklahoma:	
Tinker Air Force Base (AFB)	Airborne Warning and Control System, and Tankers
Tulsa Oklahoma Air National Guard (OKANG)	Fighters
Oklahoma City, OKANG	Tankers
Vance AFB	Fighter Training
Texas:	
Randolph AFB	Fighter Training
Fort Worth Joint Reverse Base	AF, Marine and Navy Fighters and Tankers
Dyess AFB	Bombers and Airlift
Goodfellow AFB	Intelligence Training
Arkansas:	
Little Rock AFB	Airlift Training
Fort Smith, Arkansas ANG	Fighters
Louisiana:	
Barksdale AFB	Bombers and Fighters
New Mexico:	
Cannon AFB	Gunships

Installations near Fort Sill would benefit from a "Joint Close Air Support Center of Excellence" Joint Training Center.

time above the Fort Sill ranges from 30 minutes to an hour. This is a 100 percent increase in training for the aircrew and for the joint fires observers (JFOs) or joint tactical air controllers (JTACs) training at Fort Sill. This turn-around capability could be used by aircraft from any service or coalition partner, active or total force, to increase the training for both aircrews and ground forces.

Increased Joint Training Availabilities. Fort Sill's ranges are recognized as an excellent location to work with JFOs and JTACs, especially in an urban environment. In fact, recent changes in USAF training requirements have led Randolph, Vance and Little Rock AFBs to seek opportunities to train at Fort Sill. There is an increasing need for joint training, especially to incorporate joint training in the daily training schedules. Creating a formal JCAS CoE at Fort Sill will fill an ever-increasing joint training requirement.

The 80th Flying Training Wing (FTW) at Sheppard AFB would continue its unfettered access to the local airfield to sustain the European-NATO Joint Jet Pilot Training mission, but access to airspace under a COP would allow training aircraft direct access to sub-airspace within the training complex. This would allow these aircraft a 30 percent increase in training vice the less direct routing caused by operating as three separate airspace owners. This COP would be available to every airspace user, increasing the quality *and* the quantity of training, making this airspace very attractive to all potential airspace users.

The 80th FTW's new requirement to provide CAS training to its graduates is filled by the current JTAC training at Fort Sill. Fort Sill fulfills this training need, but takes the additional step of creating opportunities for Army and Marine Field Artillery lieutenants and young AF fighter pilots to share some ground training opportunities and gain understanding of each other's missions and capabilities.

Further, the 93rd Air Ground Operations Wing wants to explore an Army course for its air liaison officers to gain further understanding of Army culture and methodology. The Joint Operational Fires and Effects Course (JOFEC) and Fire Support Coordinator (FSCOORD) Course are suited perfectly to this request. These are just some examples of taking service training to the next level to create joint warriors.

Anchoring this training complex are the ranges of Fort Sill. The impact areas allow joint forces to apply joint doctrine, best practices from current conflicts, and tactics, techniques and procedures (TTP) to train synchronized fires with greater efficiency. The ranges allow any ground unit to "deploy" to a simulated area of operations bare base, such as Altus AFB; a forward operating base, such as Henry Post Army Airfield; or by airborne or air assault on a landing zone such as Frisco Ridge on Fort Sill; then organize and move to contact via 40-mile convoy from Altus AFB or land on top of the firing positions and apply live organic or joint fires.

Equally, an AF mission support group could "deploy" to the bare base of Henry Post Army Airfield on Fort Sill and organize a base defense plan using AF security forces with their organic JFOs providing base security. This is also the opportunity for the AF security forces to conduct heavy weapons and mortars training that they cannot conduct at home base. Concurrently, a "deployed" medical support group could set up a field hospital to create a triage, critical care and evacuation facility. Simultaneously, an element of the USAF Global Air Mobility Support System sets up a forward air transport supply point to move elements of a Stryker brigade combat team (SBCT) from Fort Lewis to this forward base to augment the AF security forces and prepare for combat operations.

A Documented Need. Now is the time to expand joint opportunities among the triad of units at Fort Sill, Altus AFB and Sheppard AFB. The War on Terrorism (WOT) has created the environment where joint training opportunities need to be developed to train the way we fight. Further, as US ground combat forces are reduced in Iraq, there will be a greater reliance on US air support to help the Iraqi military to fill this security vacuum.

Analysis of the Rand Corporation study of September 2008 sponsored by the Director of Operational Planning, Policy and Strategy, Headquarters, USAF (AF/A5X), entitled "US Air Support to Iraqi Army Units During and Following US Troop Withdrawals" reveals the need for joint training for which there is no current training location. This study reveals the need to provide the joint forces with the right facilities and training to support successful execution of this phase of the WOT.

JFOs and JTACs. JFOs and JTACs are the foundation of support needed for the future fight the Rand study envisions. The command and control of the forces will be by an air support operations center and an Army warfighting unit to provide the joint fires linkage. Fort Sill has Forces Command (FORSCOM) Fires and/or ADA brigades to provide this command and control linkage. Joint forces needed for the next phase of the WOT would have the unprecedented opportunity to train on the ground and in the air as a joint team on the ranges and airspace of this training center.

After-Action Reviews. Equally important is the opportunity to have face-to-face debriefs leading to better TTP before the units deploy to take on and defeat the enemy that likely will try to take advantage of our major ground forces withdrawal from Iraq. Face-to-face debriefs are critical to improving the skills of the aircrews and ground forces involved. Ground forces' participation in the event planning and the debrief of the aircrew gives both groups immediate feedback on strengths and weaknesses, leads to better and more focused training and improves our skills as joint warriors. Integrating our joint forces in daily training will produce better joint Warfighters.

Joint Fires Observers (JFOs) (SFC Goppert, left) and Joint Tactical Air Controllers (JTACs) (SSgt Smith) work together with USAF fighters flying above Fort Sill. As the Army's Joint Close Air Support Center of Excellence (JCAS CoE), Fort Sill is working hard to increase the JFO production and helping to increase the production of JTACs by hosting the JTAC Qualification Course. (Photo by MSG Lee A. Power, Joint and Combined Integration Directorate, Fires CoE)

Capabilities. The Air Force is fielding two new aircraft systems to support this phase of the fight; the MC-12 and the AT-X. The opportunity exists to base some of these assets at Altus AFB or Sheppard AFB, or possibly even stationing these assets with the OKANG at Fort Sill. Not only could these centrally located assets be in a position to support air operations squadrons across the central US, but they would be uniquely located to support the joint lethal and nonlethal training ongoing at the Fires CoE. Adding the elements from sister services to ongoing service-oriented training—with little or no adjustment of location and timing—will provide the opportunity to train joint Warfighters everyday.

Specialized Airspace Needs. There are emerging technologies that need specialized airspace to operate. Unmanned Aerial Systems (UAS) and Joint Land Attack Cruise Missile Defense Elevated Netted Sensor System (JLENS) are just two examples for which this new training center is uniquely suited to support. The 29,000 square miles of airspace would support the emerging technology, allow the joint forces daily training opportunities and develop the TTP to integrate these new assets into joint force operations.

Under an FAA agreement, UAS normally must be flown within restricted airspace or airspace under military control. The combined airspace of the triangle of installations would lead to wider use of UAS outside the restricted areas and increase its joint training development and capabilities. Combining the UAS ability to find, fix, track and target the potential adversary; the Army's JFO and the Air Force's JTAC ability to apply joint fires on the adversary; and fighter/bomber assets' dropping live ordinance on detected targets on the Fort Sill ranges—while simultaneously employing Army surface-to-surface and surface-to-air fires—creates an ideal joint-training environment. It enables the entire joint targeting and fires process in one training location to train the way we fight.

The Fires CoE and Fort Sill, Oklahoma State University Multispectral Laboratories (OSU-UML) and the 301st Fighter Wing (301st FW) are in negotiations, establishing a memorandum of agreement (MOA) to combine and promote capabilities of a joint regional UAS Test Center. OSU-UML will pursue the attraction of UAS projects and users with the goal of being a national resource for the UAS community. Potential Test Center users will include federal, state, local and non-governmental entities.

OSU-UML will develop the Test Center and pursue customers with UAS capabilities and interests, focusing first on regional and then national partnerships. OSU-UML will coordinate all plans and operations with both Fort Sill and the 301st FW. This MOA stems from the increased role of UAS in the Department of Defense and the Department of Homeland Security. Testing and evaluation of UAS and associated technologies is critical to successful fielding and deploying of operational UAS. A need exists for an operational environment that consists of restricted air space.

Joint and Combined. These are just a few scenarios of the enhancements gained from creating the JCAS CoE joint training complex, benefiting not only Army and Air Force units, but other Services as well. Immediate impact would be felt by the Navy and Marines, as well as Canadian forces that use Fort Sill for their JTAC training. There are numerous opportunities for the core installations to incorporate joint training on a daily basis with no impacts to their individual training mission. Adding other geographically close installations increases the opportunities exponentially. Sharing resources and assets makes good sense to our installations and the joint community as a whole.

The Army-Air Force Warfighter Talks (AAFWFT) between the Chief of Staff of the Army and CSAF on 23 January 2008 and 10 February 2009 highlighted the need for routine joint training as we seek to streamline our ability to access and apply joint fires. The most recent talks also identified the need to exploit the experimentation capabilities of our battle labs using exercises like Earth, Wind and Fire, and Omni Fusion. The JCAS CoE can fill needs that were highlighted during these talks.

Interdependent training requirements; integration of live, virtual and constructive training capability; joint airborne and airdrop training; and joint lessons learned from current operations are tasks easily adapted into daily training. Units from Altus AFB, Fort Sill and Sheppard AFB can preserve the mission capabilities they have *and* enhance them to meet these needs of the future force.

Irregular Warfare, Joint UAS and Army operational command post training currently are not part of the installation's core missions, but the airspace and existing joint courses taught at Fort Sill (JFO, JTAC, JOFEC, FSCOORD and unit-level Electronic Warfare courses) are a superb foundation for adding value to both the organic courses and the development of the these joint capabilities.

The foundation of jointness is the strength of individual service competencies pulled together. Our objective in implementing the Army's JCAS CoE is the optimal integration of all joint forces uniquely postured in southwest Oklahoma and north Texas. To achieve that goal, the interdependence of the Services requires mutual trust and reliance among all Warfighters and a significantly improved level of interoperability and joint fires.

This interdependence ultimately will result in a whole greater than the sum of its parts and will contribute to achieving full spectrum dominance through all forces acting in concert. The synergy gained through the interdependence of the Services makes it clear that jointness is more than interoperability. The joint force requires capabilities that are beyond the simple combination of service capabilities, and joint exercise and experimentation form the process by which those capabilities will be achieved.

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Massed Precision Fires—
A New Way of Thinking

By Vincent R. Bielinski

During the Meuse-Argonne campaign (26 September to 11 November 1918), 20,000 guns firing a three-hour preparation supported the initial nine-division assault. The Field Artillery's (FA's) role was to provide close support to the maneuver forces, which it tried to accomplish through massive doses of indirect fire planned ahead in great detail and delivered with as much flexibility as communications and command and control permitted at the time. Mass was the key to success (See Donald E. Ingalls, "Artillery Innovations in WWI" *Field Artillery Journal*, September-October 1974, 54-57).

Those golden years of massing fires and honing their execution during the following decades remain a fond memory of every Artilleryman. The Capability Exercises held at Fort Sill, Oklahoma, between 1987 and 1991, for Artillery students and even for Command and General Staff College students from Fort Leavenworth, Kansas, displayed the might of the Field Artillery as the fires of a dozen battalions massed on a single "Time on Target" fire mission. Maneuver commanders also were included so they could witness the awesome might of the *King of Battle*. Everyone, even experienced Artillery commanders, left impressed.

Today's Enviornment. Today, however, FA no longer masses a large number of rounds fired from dozens of guns to engage targets. Modularity is one of the principle reasons. The Army no longer has the number of division artilleries or corps artilleries with several Field Artillery brigades and their subordinate battalions as in the past.

Now, most Fires battalions are organic to their brigade combat teams, and the division commander seldom takes them away from the brigade commander to mass fires. Division commanders may receive a Fires brigade to support its force, but the number and type of units within that Fires brigade is tailored to the division's mission.

The second argument against massed fires is the contemporary operations FA supports. The rules of engagement (ROE) and the requirement to minimize collateral damage in most cases prevent the employment of large amounts of artillery in an area to neutralize or destroy enemy targets.

The final "nail in the coffin" of massed fires is the development and fielding of precision munitions. There is no need to expend large amounts of "dumb" artillery rounds—those following an unaided ballistic trajectory—into an area when a single precision munitions can achieve the desired effect.

But are massed fires truly consigned to history? Or is there just another way of thinking about massed fires? How can FA mass fires using precision munitions? At first, the questions seem rhetorical because of the argument that "precision weapons were the final coffin nail" of massed fires. However "how do we achieve the effects of massed fires using a small number of precision munitions" is the actual question?

Precision Guidance Kit Fuze on a 155-mm "dumb" Artillery round

Massing Precision. Instead of those 20,000 guns from the Meuse-Argonne preparation, how does FA achieve the effects desired by a single division by three or six Fires battalions? In current and near future operations, FA likely will support smaller maneuver forces, for example a combined arms battalion, a company or even a smaller unit. FA must leverage the accuracy and flexibility afforded by precision munitions. FA must accurately locate a number of enemy targets that support a maneuver operation and time the attack of these targets with precision munitions.

One example would be an operation to grab a high value individual (HVI) in a sparsely populated rural town. Intelligence identified the building where the HVI will sleep that night. The intelligence sources also identified the locations of the HVI's command post, quarters for his escort and fortified buildings that control access to and from the town.

The maneuver plan is for Soldiers to rappel from a helicopter assault onto the HVI's building and capture him along with any material he may have. Electronic attack against cell phone capabilities forestalls any early warning of the approaching friendly force. The fire support plan employs precision munitions to attack the command post, escort quarters and fortified buildings less than one minute before the assault force arrives. These precision weapons do not exceed ROE and collateral damage estimates.

Excalibur

The simultaneous attacks on the enemy forces provides the shock and surprise to enable the assault force to capture the HVI quickly, perform a hasty sensitive-site exploitation and egress. Additional precision munitions may be planned as "on call" to re-attack the barracks and fortified buildings to aid in the assault force's departure.

Consideration. Ideally, a Fires brigade would be the preeminent organization to plan and execute these precision massed fires. The Fires brigade could plan, prepare and execute the fires of Excalibur, Guided Multiple-Launch Rocket System and Non-Line-of-Sight Launch System for the supported division. These missions require detailed planning for the munitions to arrive at the specified time.

For the old massed fire missions—those that involved munitions that follow unaided ballistic trajectories—the only variable was time of flight, and each unit fired based solely on this event. For the massed precision fires missions, time of flight is not the only consideration, but also launch axis, flight path, way points and airspace deconfliction. Because the Army and FA cannot guarantee the presence of a Fires brigade, the ability to conduct massed fires using precision munitions is a task that each Fires battalion must be able to accomplish.

Has the time of massing "dumb" artillery fires passed? Years ago, some pundits said that the Air Force's dumb bomb went the way of the dinosaurs and that only precision munitions would be used in future wars. The pundits seemed to be correct until B-52s dropped both guided munitions and large numbers of dumb bombs and changed the mind of the Taliban in Afghanistan. Other soothsayers called for the demise of the tank because future operations would never need armored vehicles. They argued the High-Mobility, Multipurpose Wheeled Vehicle would be sufficient for everyone in every operation. This author does not have to tell you how that forecast turned out. FA may not conduct massed fires often in the future, but it must never lose the ability to train for and employ them.

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2009 *Fires* Photo Contest

The 1 August submission deadline for the 2009 *Fires* Photo Contest is approaching quickly. The competition is open to any military or civilian, amateur or professional photographer.

Scope and Purpose. Photos should capture images that tell the story of today's Army and Marine Field Artillerymen or Air Defenders in the War on Terrorism (WOT) or in training between 1 July 2008 and 30 June 2009. These photos may appear as a cover or other shots for future editions of the magazine, as part of the Chief of the Fires Center of Excellence poster series, calendar or in other esprit de corps or strategic communications projects.

Although entrants may submit horizontal or vertical photographs, vertical shots tend to work best for magazine covers and posters. For more information on how to take a great photo, visit our website at **http://sill-www.army.mil/firesbulletin/photographers.asp**.

Two Prize Categories—Six Prizes. A First Place prize of $500, Second Place prize of $200 and Third Place prize of $75 will be awarded in each of two categories: 1) Training for Combat/Stability Operations and 2) Actual Combat/Stability Operations. Each entrant can submit up to three photographs.

The winning photos will be published in *Fires* and posted in the magazine's Photo Gallery on our website at **sill-www.army.mil/firesbulletin/**.

Submissions. Submit your photos to *Fires* Bulletin via email, or compact disc (CD). CDs will not be returned. Email images to the *Fires* Bulletin at firesbulletin@conus.army.mil. Please submit only one image per email. Mark the subject line as "2009 Photo Contest/Photo #1 (2 or 3), Entry Category–Your Last Name."

For more information on the contest rules, please visit our website at **http://sill-www.army.mil/firesbulletin/contest.asp**. If you have further questions, call the *Fires* staff at DSN 639-5121/6806, commercial at (580) 442-5121/6806 or email us at firesbulletin@conus.army.mil.

Targeting 101:
Emerging Targeting Doctrine

By LTC David N. Propes, FA

What constitutes a *target*? Is it a motorized rifle company repositioning as part of a combined arms reserve, whose potential effect on the battlefield places it squarely on the brigade combat team (BCT) commander's high-payoff target list? Could it be a dug-in infantry strongpoint, positioned in such a way that it can delay a much larger unit's movement indefinitely along an axis of advance? Perhaps it is an improvised explosive device production cell operating among an otherwise passive local populace with a notable insurgent leader at its head, coordinating an effective, widespread campaign bent on fostering unrest and instability. Is it a single 60-mm mortar, mounted in the trunk of a sedan, occasionally firing a couple of rounds into an adjacent forward operating base and then quickly melting back into an indigenous population?

If you answer yes to all of the above, you almost certainly have an appreciation for the diverse set of targets at all levels of warfare that have probably presented themselves to a targeting officer during the last few years. It is important to keep in mind that the examples listed above, in all likelihood, call for the use of lethal targeting to address them, and that there is also an equally diverse array of scenarios which lend themselves to nonlethal targeting.

In *Joint Publication (JP) 1-02 Department of Defense Dictionary of Military and Associated Terms*, a target is defined as a geographical area, complex or installation planned for capture or destruction by military forces. Targets also include the wide array of mobile and stationary forces, equipment, capabilities and functions that an enemy commander can use to conduct operations. In *JP 3-0 Joint Operations*, the term "targeting" is defined as the process of selecting and prioritizing targets and matching the appropriate response to them, considering operational requirements and capabilities. While joint doctrine is not fundamentally wrong in its approach on defining targeting, it does leave the end user, the Soldier in today's operational environment (OE), lacking a really descriptive, useful doctrinal solution.

Field Manual (FM) 3-60 The Targeting Process. The current Army and Fires Center of Excellence (CoE), Fort Sill, Oklahoma, effort to clarify this perceived targeting doctrine shortfall is *FM 3-60 The Targeting Process* (Initial Draft). *FM 3-60* states that "successful targeting enables the commander to synchronize intelligence, maneuver, fire support systems, nonlethal systems and special operations forces by attacking the right target with the best system at the right time. Targeting is a complex and multidiscipline effort that requires coordinated interaction among many groups."

The draft version of *FM 3-60* retains Decide, Detect, Deliver and Assess (D^3A) as the Army's targeting process. This decision keeps in place a proven doctrinal methodology that has been successful for numerous years in exercises and actual combat situations, and continues to be relevant in the current OE. D^3A has demonstrated its flexibility and is recognized in *JP 3-60 Joint Targeting* as the land component commander's interface with the joint targeting cycle by incorporating the same fundamental functions as that process.

With that being said, the Fires CoE doctrine writers, as well as a number of knowledgeable, experienced targeting experts from a variety of specialized fields, recognized the fact that D^3A can and should be improved. Giving the D^3A process more flexibility and specific targeting methodology additions in *FM 3-60* ensures targeting doctrine relevancy in any spectrum of conflict for the foreseeable future.

Incorporating Specialized Targeting Methodologies. In April 2008, the Department of the Army tasked Fires CoE to take the lead and examine the Find, Fix, Finish, Exploit, Analyze and Disseminate (F^3EAD) targeting methodology and determine if it was valid, emerging doctrine or simply useful tactics, techniques and procedures (TTP)—perhaps

An example of lethal targeting, Precision Attack Missile (PAM) closes in on its target during a recent test flight at White Sands Missile Range, New Mexico. (Photo courtesy of Netfires, LLC)

Target Number	DP0019	Tier 1 / Tier 2 / Tier 3	Establishing HQ	————————
Target Category	Terrorist AQI		Effective DTG	10 1500 MAR09
Tier I II III	Tier 1 Target		POC Data	Brigade S2
HVI or Target Name		Target Data (Physical Description and Location)		
		1 Location	—— (Grid Coordinates)	
		2 Disposition	Static as of 10 0900 MAR2009	
		3 Height/Weight	Unknown	
		4 Age/Gender	35-40 year old male	
		5 Hair/Eye Color	Brown/Brown	
		6 Clothing	—— Attire	
		7 Ethnicity	Unknown	
		8 Religion	————————————	

Additional Intelligence:	Additional Worksheets
<Target Alias> <Known/Suspected Activities> <Capabilities>	1 Associated PIR/SIR Data
<Intentions> <Primary and Secondary Associations>	2 Link Analysis Worksheet
<Interrogation & Tactical Questioning Guidance> <SSE Guidance>	3 Additional Maps/Photos
<Target Vulnerabilities>	4 Associated Targets and TVA
	5 Collateral Damage Estimate

Commander's Criteria for Execution			Remarks	Recommended Actions
1 Target Positive ID			LTIOV	*Hand off to ____ in for Execution NLT _____
2 Target Location Accuracy				**Capture/Kill HVI
3 Source Reliability			ID Corroborating Sources	
4 Intelligence Value			Impact on Intel Collection	
5 Imminent Threat				

Legend:

HVI = High-Value Individual
HQ = Headquarters
ID = Identification
DTG = Date-Time Group
NLT = Not Later Than
PIR = Priority Intelligence Requirements
POC = Point of Contact
SIR = Specific Information Requirements
SSE = Sensitive Site Exploitation
TVA = Target Value Analysis

Figure 1: A sample cover sheet of a Target Information Folder summarizes relevant information as it is gathered. The folder could be used for both nonlethal and lethal targeting.

not quite worthy of being codified as Army doctrine. This tasking arose as a result of discussion held at the Combined Arms Center (CAC), Fort Leavenworth, Kansas, semiannual Combat Training Center (CTC) Conference.

During the next few months and after working in conjunction with Deputy Chief of Staff G-3/5/7, CAC, the Asymmetric Warfare Group, the Army Capabilities Integration Center, and the Fires CoE Doctrine Division of the Directorate of Training and Doctrine (DOTD), Fires CoE determined that F^3EAD is a legitimate, valuable process and moved to incorporate it into the draft *FM 3-60*. It also was deemed necessary to incorporate the Find, Fix, Track, Target, Engage and Assess (F^2T^2EA) process, developed to facilitate dynamic targeting at the joint level, and primarily designed to attack time-sensitive and high-payoff targets. While F^2T^2EA is, in effect, a subset of the joint targeting cycle, it was deemed necessary for Army doctrine to echo the methodology, considering the joint nature of Army operations and the need for our targeting personnel to understand the joint interdependency prevalent in today's OE. However, expanding upon the relationship between D^3A and F^3EAD is the primary goal of this article.

How F^3EAD Fits into the D^3A Framework. Once it was determined that F^3EAD is a valid targeting process, it was immediately recognized that it should not serve as a replacement for D^3A, but as a subset designed for a specific targeting requirement that refines the actions to be completed when engaging high-value individuals (HVIs). Occasionally referred to as a "personality target," an HVI could be defined as "a person of interest (neutral, friendly, adversary or enemy), who must be identified, surveilled, tracked and influenced through the use of information or fires."

This definition leaves the door open for a wide variety of Fires and/or effects, which are scalable from the nonlethal to lethal spectrum to affect an HVI as required. Figure 1 shows a sample cover sheet of a target information folder, which summarizes relevant information

as it is gathered. The folder could be used for both nonlethal and lethal targeting.

One characteristic of F^{3}EAD is a massed, persistent intelligence, surveillance and reconnaissance (ISR) effort tied to a powerful and decentralized all-source intelligence apparatus, with the intent of finding an HVI possibly amidst a background of noncombatants. Precise target location combined with the quick, efficient use of either lethal or nonlethal means is the key to either influencing the target or removing the target from the OE.

F^{3}EAD highlights the Exploit phase and, when combined with the Analyze phase, often can constitute the main targeting effort. This exploitation and subsequent analyzing of the results can provide insight into an enemy network and might offer new lines of operations or targeting opportunities—in essence starting the cycle over again with subsequent HVIs or other targets. Figure 2 illustrates how the F^{3}EAD process complements the D^{3}A process. The steps are broken down in *FM 3-60 The Targeting Process*.

The targeting process still begins with a Decide function in which decisions are made on priorities and the allocation of resources. The Detect function is broken into two parts, Find and Fix. During the Find step, the HVI is identified and the target's network is mapped and analyzed. During the Fix step, a specific location and time to engage the HVI is identified, and the validity of the target is confirmed. The Finish step mirrors the Deliver function. The action planned against the target is initiated and completed.

The Exploit, Analyze and Disseminate steps amplify the Assess function. The engaging unit gathers additional information during the Exploit step, determines the implications and relevance of the information during the Analyze step and publishes the results during the Disseminate step. Exploit and Analyze steps may occur during the latter stages of Finish and result in the immediate expansion of the operation based on material obtained. For example, a raid that captures an insurgent leader may result in additional HVIs engaged when a list of cell members is discovered in the insurgent leader's possession.

It is important to remember that the targeting process is a continuous process. At any given time a unit may be at the Find step for some targets, the Exploit step for several other targets, and at the Fix, Finish, Analyze or Disseminate step for still other targets. Similarly, the unit may disseminate information pertaining to the location of a target before the Finish or Exploit steps. Generally, the process will follow the depicted flow, but the process itself should not restrict what needs to happen next.

Staffing to the Field. *FM 3-60* is one of several emerging doctrinal products that the Fires CoE Doctrine Division is working. As with all draft doctrine, *FM 3-60* will be subject to worldwide staffing to all Fires headquarters and staffs (typically down to Fires battalion level) and to BCT commanders. Doctrine also is staffed to all Training and Doctrine Command CoEs, as well as other specific departments and staff sections as required.

Draft FMs normally are staffed two to three times, depending on the nature of comments and need for modification of a particular draft. An excellent example of the Fires CoE staff's diligence and understanding that the field needs to take an active part in doctrine development is evidenced by the work and staffing done on *FM 3-09 Fire Support* (the cornerstone of Fires doctrine, replacing *FM 6-20 Fire Support in the AirLand Battle*) and *FM 3-09.24 The Fires Brigade*. Both FMs have been staffed multiple times to the field, in light of the many changes and new TTP emerging from operations in Iraq, Afghanistan and elsewhere in the world.

The Way Ahead. In *FM 3-60*, D^{3}A is reaffirmed as the overarching methodology for targeting, with F^{3}EAD and F^{2}T^{2}EA complementing it and providing the framework for the specific needs of the force. HVI and time-sensitive targeting models help to refine targeting efforts and address gaps that may exist in current targeting doctrine. These complements to the D^{3}A process provide for added flexibility and ensure targeting doctrine relevancy for the foreseeable future. By fully staffing this kind of emerging doctrine to the field and allowing for significant input from those who actually have to live with the doctrinal products, the Fires CoE seeks to ensure that the force has a relevant, useful doctrinal underpinning for full-spectrum operations as outlined by *FM 3-0 Operations*.

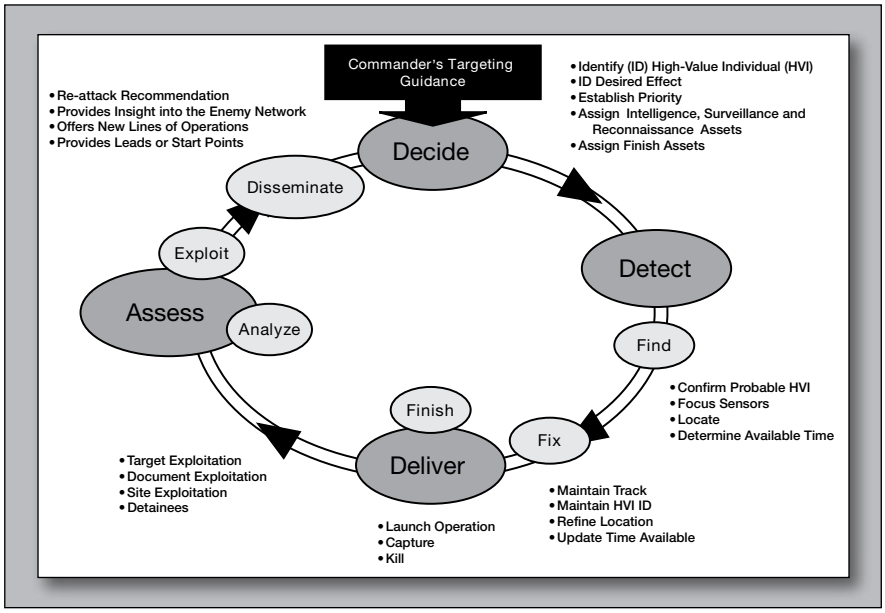

Figure 2: HVI Targeting Process: Find, Fix, Finish, Exploit, Analyze and Disseminate (F^{3}EAD) within the Decide Detect, Deliver and Assess (D^{3}A) process. The Deliver phase is the third phase of the land component targeting cycle.

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AH-64 Apaches support MAJ Jason D. Adams and a Special Forces Operational Detachment Alpha (SF ODA) while in troops-in-contact with Taliban fighters in the Helmand Province of Afghanistan. (Photo by MAJ Jason D. Adams)

The Path Less Traveled: Fire Supporters in SOF

By CPT William W. Earl, CW3 Ray M. Bischoff and MAJ Jason D. Adams, all FA

One of the most important lessons learned by Army Special Operations Forces (SOF) in the War on Terrorism (WOT) was the need to integrate joint fires at all levels of operations. Adding joint fires elements (JFEs) to the structure of each special group ensures that special operators integrate all available assets into their operations. To meet the growth requirements, the Field Artillery (FA) is looking for highly motivated fire supporters who have a warrior mindset and can think and adapt to rapidly changing environments.

The Army's transformation created within the SOF community additional fire support positions and expanded the opportunities to develop highly diversified leaders within the FA. Fire support positions have existed within the SOF community primarily throughout the Ranger Regiment, but the bridge into the Special Forces enhances our capabilities as a branch and provides a fire support subject matter expert (SME) to the Special Forces (SF).

Our operational environment has changed since the start of WOT. Today's leaders must be diverse experts in combined, joint and interagency operations. This applies not only within the conventional realm for today's Warfighter, but also requires an understanding of the dynamics of unconventional forces operating within that environment.

The SF assignment is a challenging, self-motivated and invaluable assignment that should be resourced and maintained to enhance our fire support community now and into the future. As battalion fire supporters in an SF Group, we can say that these types of assignments are worth pursuing based on the prestige of the unit, the experience gained and the opportunities *not* found in other units.

The SF fire supporter's daily duties and responsibilities, in some ways, do not differ from what many battalion-level fire support elements currently conduct in Iraq or Afghanistan. Based on recent operational deployments, most fire support elements operate within a combined or joint environment and understand the inherent intricacies. The question remains, what makes a position in the SF so different from any other battalion fire support assignment?

One significant difference is that you are a JFE operating across multiple brigade and division boundaries. This requires the members of your element to have highly diverse backgrounds and a strong knowledge base to rely upon. There are many pieces to that puzzle, and the following are some of the major points brought up by former Redlegs who have served within the SF.

Selection. The formal selection process begins with potential candidates contacting their FA assignments branch officer/NCO. The FA assignments branch then narrows the field of applicants by using factors, such as previous fire support experience and previous key developmental position experience. After this process, the selection packets of only the most qualified personnel are forwarded to US Army Special Operations Command (USASOC) for review. Applicants whose records meet the USASOC screening criteria are scheduled for an interview.

After all interviews are complete, USASOC notifies FA assignments branch of their selections.

Having previous fire support experience is a requirement for fire support assignment with SF units. Staying up-to-date on lessons learned and the emerging trends within the fire support community provides the knowledge and experience to be effective within this staff. Just as important is military transition team (MiTT) experience. This is the closest, most relevant experience in the conventional force that corresponds to one aspect of the Operational Detachment Alpha's (ODA's) mission (see the "A Closer Look at SOF" on Page 20). This is not an essential requirement, but is one that increases the chance to be assigned to an SOF unit.

Schooling and Preparation. Before reporting for duty in an SOF unit, the fire supporter most likely will attend additional schools to prepare him for the uniqueness of the upcoming assignment. The FA Branch is adamant about getting started correctly, so it programs fire supporters to attend courses like the Joint Firepower Course at Nellis Air Force Base (AFB), Nevada, and the Joint Air Tasking Order Process Course at Hurlburt AFB, Florida. After reporting to the SF unit, the fire supporter may attend additional training such as the Special Operations Terminal Attack Controller Course.

An SF fire supporter may work with targeting systems such as Joint Automated Deep Operations Coordination System (JADOCS), Precision Strike Suite for Special Operations Forces (PSS-SOF), Command Post of the Future (CPOF) and my Internet Relay Chat (mIRC). In many cases, he must be the SME as well. Equally important is the management and integration of the Lightweight Countermortar Radars (LCMRs) within the battalion as part of targeting and force protection.

Planning, employment and coordination of these assets are the JFE's responsibility. These are tools that fire supporters must understand and leverage to build an operational picture. To train on these assets, Artillerymen can contact the nearest field service representative or go to the Fires Knowledge Network available through Army Knowledge Online at **http://www.us.army.mil**.

Additionally, an SF fire supporter wears multiple hats as he most likely will be one of the more senior officers or NCOs within the operations center. Fire supporters should have an operational mindset going into an SF assignment and get the training necessary before arriving. It is not atypical to in-process the unit and, within 30 days, deploy on an operational mission.

The learning curve for those selected for SF positions is steep. If a leader cannot operate independently and provide relevant recommendations to the commander, then these assignments are not recommended. Some SF commanders have fire support experience and will call a newly assigned fire supporter out immediately to determine if he is worth his weight in salt. An SF fire supporter must study fire support doctrines and tactics, techniques and procedures; learn and know his craft; and be able to apply it without hesitation.

Arrival. Establishing oneself within the SF battalion goes beyond being the SME in this community. Being physically fit and mentally strong are the fastest ways to build rapport and demonstrate that he is not a physical liability. This goes hand in hand with self motivation. No one here is going to tell someone to do physical training or that he needs to do his homework. Not doing so quickly results in being marginalized. In an environment that tends to be decentralized, it is essential to interface personally with each company and team to ensure they know what the fire supporter can do for them.

Fire supporters must have a thorough knowledge of the targeting process in both the lethal and nonlethal arenas. Lethal targeting goes beyond the aspect of planning for and calling fire support assets such as Artillery, close air support (CAS) and air-ground integration with rotary wing assets. Understanding personality-based targeting is part of precision fires, which must be implemented to put the right effect against the desired target. With internal defense forces taking over security missions, fire support officers (FSOs) must apply their subject matter expertise and understand targeting principles to achieve the desired effect a team is requesting for any given operation.

As for nonlethal targeting, fire supporters must understand networks of influence and how they support developing future operations. Not everything done in the SF world is kinetic, and the relationships ODAs build are instrumental to the overall success of the Special Operations Task Force (SOTF). For example, integrating electronic fires to disrupt enemy early warning as the essential task for shaping the operation allows an ODA with its partnered foreign internal defense unit to accomplish the mission successfully.

The capability to target specific networks of influence can undermine an enemy network's center of gravity to exploit for future kinetic operations. This type of targeting is a critical line of effort for the SOTF. The targeting methodology we use for this is Find, Fix, Finish, Exploit, Analyze, and Disseminate (F^3EAD). Fire supporters should become intimately familiar with this methodology, because it works.

Operations. What truly makes SF fire support positions unique is the partnership and coordination required at this level. The SF battalion, when deployed, serves as the SOTF and typically is partnered with a division headquarters. FSOs must understand this and know that much of what happens at the SOTF level is cross referenced with a conventional force division or brigade combat team (BCT), at the minimum. Many times that partnership requires the FSO to coordinate at levels

CPT William W. Earl runs in the St. Patrick's Day 13.1 mile half-marathon hosted by Special Operations Task Force North in Iraq. Physical Fitness is a personal as well as professional responsibility in the Special Forces. (Photo by SPC Benjamin Fox)

A four man team approaches a building during a Special Forces training event at the Muscatatuck Urban Training Center in Indiana, 9 December 2009. The muzzles on their M4 assault rifles are modifications made to enable the weapon to shoot clay bullets, making the training more realistic. (Photo by SPC John Crosby, Camp Atterbury Public Affairs)

much higher than what typical battalion FSOs execute.

SF fire supporters must become familiar with how a division headquarters and the multiple entities within that level to include the corps function because the relationships built there can make or break the ability to integrate assets. Information is a powerful asset and not having the manpower found at the division level means pulling a lot of data from them to build your operational picture and support the teams.

The JFE also conducts targeting and plans and coordinates fire support for 18 ODAs, sometimes conducting concurrent operations. Generally, SOTF mission planning is bottom-up driven; meaning that the ODAs plan the mission, and the SOTF coordinates and requests assets to support the mission.

The driving factor in the planning process is targeting. The ODAs mainly target high-value individuals or cells such as improvised explosive device cells. These types of targets are event-driven targets and rely heavily on integrating several intelligence disciplines at once to identify and track the targets. Access to intelligence assets in the SOTF is quite robust with human intelligence (HUMINT), signal intelligence (SIGINT), communications intelligence (COMINT), and imagery intelligence (IMINT) capabilities represented in the S2 cell.

This ability is vital during the entire targeting process and can range from a local source providing HUMINT to national-level assets providing COMINT. Not only are these assets necessary for operations planning, but often essential to executing the plan. It is essential that the JFE personnel have a Top Secret clearance so that they can access all intelligence assets and be included in every piece of targeting with the S2.

Planning for each ODA mission is similar to planning for a maneuver company, except for getting the fire support assets normally given to battalion or

A Closer Look at SOF

Army Special Operations Forces (SOF) consist of Special Forces (SF), Ranger, Special Operations Aviation, Psychological Operations (PSYOPs), Civil Affairs (CA), as well as Signal and Combat Service Support (CSS) units.

Special Operations are defined as operations conducted by specially trained, equipped and organized Department of Defense forces against strategic or tactical targets in pursuit of national military, political, economic or psychological objectives. These operations may be conducted during periods of peace or hostilities. They may support conventional operations, or they may be undertaken independently when the use of conventional forces is either inappropriate or infeasible.

One of the most important lessons learned by Army Special Operations Forces (SOF) in the War on Terrorism (WOT) was the need to integrate joint fires at all levels of operations.

The mission of the Special Forces Groups is to plan, prepare for and, when directed, deploy to conduct unconventional warfare, foreign internal defense, special reconnaissance and direct actions in support of US national policy objectives within designated areas of responsibility.

The units continually train to conduct unconventional warfare in any of its forms—guerrilla warfare, evasion and escape, subversion and sabotage. The Soldiers are schooled in direct action operations and special reconnaissance. Approximately 1,400 Soldiers are assigned to each group.

A-Team. The 12-man A-Team is the key operating element of the SF Group. The primary operational element of a Special Forces (SF) company, an A-Team, consists of 12 SF Soldiers—two officers and 10 sergeants. All team members are SF qualified and cross-trained in different skills. They are also multilingual. The A-Team is almost unlimited in its capabilities to operate in hostile or denied areas.

A-Teams can infiltrate and exfiltrate their areas of operations by air, land or sea. An A-Team can operate for an indefinite period of time in remote locations with little or no outside support. They truly are independent, self-sustaining "detachments." A-Teams routinely train, advise and assist other US and allied forces and other agencies, while standing by to perform other special operations as directed by higher authorities. All detachment members are capable of advising, assisting and directing foreign counterparts in their functions up through battalion level.

higher echelons. Nonorganic fire support assets include CAS from US and Coalition fixed-wing aircraft, indirect fire support from 105-mm, 155-mm and High-Mobility Artillery Rocket Systems/ Multiple-Launch Rocket Systems, attack helicopters and now armed unmanned aerial vehicles such as the MQ-1 Predator and the MQ-9 Reaper. In certain cases in Afghanistan, there are 105-mm platoons living with and providing direct support to ODAs.

Each ODA has a joint terminal attack controller (JTAC) attached, and it is the JFE's responsibility to receive and process all air support requests (ASRs) for CAS and electronic warfare assets from all 18 JTACs. The JFE tracks the ASRs all the way from the JTAC through the air tasking order process until it is either not supported or supported. If supported, the JFE informs the JTAC on the mission-related data, such as aircraft type, call signs and time-on-station. CAS accounts for the vast majority of fire support assets provided to an ODA due to the distances required and the limited availability of the other fire support platforms

There is a higher level of responsibility and expectations of a fire supporter assigned to an SOF JFE. He is the fire support coordinator for an area the size of a division area of operations; he has 18 subordinate elements depending on his ability to plan and coordinate fire support assets for each of them. He has access to more intelligence and joint fire support assets than he would in a typical battalion or BCT. And he must be able to manage it all concurrently 24 hours a day.

This is a rewarding assignment. Do not lose sight of that goal. What we are doing now is one "stepping stone" that strengthens the capabilities for both the Special Forces and Redleg communities. Military Occupational Specialty 13F Fire supporter Specialists, 131A Field Artillery (FA) Targeting Technicians and Area of Consideration 13A FA Officers who are interested in a Special Operations assignment should contact their assignments officer/NCO to discuss required qualifications.

Captain William W. Earl, Field Artillery (FA), is the Fire Support Officer for 3rd Battalion, 5th Special Forces Group (A), Fort Campbell, Kentucky. Previous assignments include the Brigade Fire Support Cell Observer Controller at the National Training Center, Fort Irwin, California; Commander, A Battery, 4th Battalion, 1st Field Artillery, 3rd Brigade Combat Team, 1st Armored Division, Fort Riley, Kansas; and Platoon Leader, 2nd Howitzer Battery, 2nd Armored Cavalry Regiment, Fort Polk, Louisiana.

Chief Warrant Officer Three Ray M. Bischoff, FA, is the Group Targeting Officer for 5th Special Forces Group (A), Fort Campbell, Kentucky. Previous assignments include the Division Targeting Officer and Field Artillery Intelligence Officer with 10th Mountain Division, Fort Drum, New York; Targeting and Fire Support Trainer with 2nd Brigade, 78th Division, Fort Drum; Brigade Targeting Officer and Division Targeting Officer, 3rd Infantry Division, Fort Stewart, Georgia.

Major Jason D. Adams, FA, is a Student at Intermediate Level Education at Fort Leavenworth, Kansas. He was selected to be the first FSO assigned to 3rd Battalion, 7th Special Forces Group (Airborne) (3-7 SFG), Fort Bragg, North Carolina. He was also a qualified Joint Terminal Attack Controller, deployed in support of Operation Enduring Freedom with 3-7 SFG. He served as the Battalion Fire Direction Officer for 1-321 FA and Commander, C Battery, 1-321st FA at Fort Bragg, North Carolina. He was a Striker Platoon Leader, Assistant Brigade Fire Support Officer, 2nd Brigade, 2nd Infantry Division, and a Counterfire Liaison Officer to the V Republic of Korea Corp at Camp Hovey, Republic of Korea.

Rangers. Rangers are the masters of special light infantry operations. These include attacks to temporarily seize and secure key objectives and other light infantry operations requiring unique capabilities. Like their Special Forces counterparts, Rangers can infiltrate an area by land, by sea or by air.

Aviation. The 160th Special Operations Aviation Regiment is a unique unit. It provides support to SOF on a worldwide basis with three types of modified helicopters. The capabilities of the aviation units include inserting, resupplying and extracting US and allied SOF personnel. They also aid in SOF search and rescue, and escape and evasion activities. In addition to general aviation support to the SOF community, these units provide airborne command and control, and fire support.

MAJ Jason D. Adams and an SF ODA observe the effects of AH-64 Apache support while in troops-in-contact with Taliban fighters in the Helmand Province of Afghanistan. (Photo by MAJ Jason D. Adams)

PSYOPs. PSYOPs' mission is to disseminate truthful information to foreign audiences in support of US goals and objectives. PSYOP units accomplish their missions by disseminating messages in the form of leaflets, posters, broadcasts and audiovisual tapes. Each unit has its own intelligence and audiovisual specialists.

CA. The CA units are designed to prevent civilian interference with tactical operations, to assist commanders in discharging their responsibilities toward the civilian population and to provide liaison with civilian government agencies. In late 1995, the US Army Special Operations Support Command (Airborne) was formed to centrally manage signal and combat service support to SOF units.

Signal and CSS. The 112th Special Operations Signal Battalion (Airborne) provides communications links and service between the command, joint controlling agencies or commands, and US Army special operations commands in two theaters of operation.

The 528th Special Operations Support Battalion (Airborne) enhances US Army Special Operations Command's medical, maintenance, supply and transportation capabilities.

Joint Fires University Concept:

Providing Leaders and Experts in the Art and Science of Fires

"In the volatile, uncertain, complex and ambiguous environment we face for the foreseeable future, if we were to choose merely one advantage over our adversaries, it would certainly be this: to be superior in the art of learning and adaptation. This is the imperative for a culture of innovation in the United States Army." BG David A. Fastabend and Mr. Robert Simpson, *Adapt or Die*

By Alvin W. Peterson

On 1 April 2008, MG Peter Vangjel, the Commanding General of the Fires Center of Excellence (CoE) and Fort Sill, Oklahoma, published the Field Artillery Campaign Plan (FACP). As part of an effort to transform the US Army Fires capabilities to meet the challenges of this century, the FACP tasked the of US Army Field Artillery School leaders to develop a strategy for the creation of a Joint Fires University (JFU). As a university "without walls," the JFU will enable Fires excellence through a blend of institutional courses, distance learning, virtual experiences and online forums.

Students will be able to access JFU courses from the University at Fort Sill, another service school, a civilian university or even at home station. Whether participating at the institution or virtually, Fires students from the Army, other services and civilian agencies will not only have access to experts from the institution, they will be able to share knowledge with each other as well.

The crucial point is that the JFU will provide Fires learners with continuous access to training and education that supports career progression and provides "just-in-time" knowledge for emerging operational requirements. Through a combination of enabling technologies, the JFU will feature cutting-edge training and education methodologies, constant quality mentorship and superior learning and adaptation techniques in the art and science of Fires application and integration. The JFU will provide the nation with the Fires leaders and experts it needs.

Why a JFU? The question presents itself, why change? Why is an Army JFU needed? There are those who might assert that our Soldiers and leaders have performed admirably during the last seven years of war. Of course they have. It is clear that the nation fielded an exceptionally well-trained Army. But the questions must be asked, are our Fires integration skills adequate? Can we do it

better? Are we doing enough to prepare for the challenges of the future?

Contemporary Operating Environment. In 1997, in a speech before the National Press Club, General Charles C. Krulak, the Commandant of the Marine Corps, predicted the demands facing future warriors, coining the term Three-Block War. "In one moment in time, our service members will be feeding and clothing displaced refugees, providing humanitarian assistance. In the next moment, they will be holding two warring tribes apart, conducting peacekeeping operations. Finally, they will be fighting a highly lethal mid-intensity battle—all on the same day—all within three city blocks."

Before September 11, 2001, the Army prepared to fight a war with large formations against a similarly arrayed force, with the front line clearly articulated (and, in some cases, permanently drawn on maps). The enemy was well known, and his actions were predictable. Men who had spent many years preparing for this type of war would lead the major formations.

The majority of decisions would be made by those with the most experience, the most training and the most education. The young and inexperienced would execute the missions given to them by those more seasoned, only having to focus on tactical decision making. Strategic decisions would reside in the hands of general officers who spent years preparing to make those decisions.

While devastation and defeat were penultimate concerns, there was a sense of comfort as a result of predictability of enemy actions and the idea that force ratios could be managed to achieve a decisive victory. The scenario just described is not the reality that military leaders face today. Rather, General Krulak's three-block war and hybrid threats are the reality for our young warriors. It even can be argued that perhaps a fourth block has emerged with the control of information and knowledge being absolutely critical to strategic, operational and tactical success.

Cleary, our young leaders face an increasingly complex environment. In an age of instant communication, CNN and the use of information as a weapon, the decisions of the young and inexperienced have strategic implications. No longer are critical decisions the exclusive realm of senior leaders. Recognizing the reality of the strategic junior officer, junior NCO and Soldier, the US Army leadership is calling for development of agile and adaptive warriors at the lowest level.

Army Needs. The Army Training and Leader Development Panel defined adaptability as the ability to "recognize changes to the environment to determine what is new and what to learn to be effective." Army leaders are looking for adaptive and critical thinkers who are capable of functioning in uncertainty. The Army requires leaders who are competent and confident in their core proficiencies; who can operate across the spectrum of conflict and employ their units; and who are tactically and technically competent, confident and adaptive. Army leaders also must have the knowledge and skills necessary to train and employ modular force units; be culturally aware and astute; be capable of executing mission-type orders and commander's intent; and be leaders of character.

The necessity to create agile and adaptive leaders from young and inexperienced Soldiers has the Army senior leadership calling for the transformation of how Soldiers are trained and educated. In General George W. Casey's 2008 Army Training and Leader Development Guidance, he stated, "Our Army has made tremendous progress since 9/11 in adapting training and leader development, but there is still much that has to be done. The new ways to train cannot simply be more good ideas added on top of old proven methods. As we grow the Army over the short term, we must adapt to the realities of persistent conflict, restore balance and build the strategic depth the nation requires. The three factors—adaptation, balance and strategic depth—will require innovation and change as we transform training and leader development to achieve our goals."

The challenge is clear; we must train our Soldiers and leaders to be technically and tactically competent and confident while educating them for uncertainties that they may face in an Era of Persistent Conflict. From a Fires perspective, we must prepare our Soldiers and leaders to plan, integrate and employ both lethal and nonlethal fires in full-spectrum operations and to be able to articulate to the maneuver commander the second-and third-order effects resulting from the use of fires.

The Mission. This task is made all the more challenging by the fact that many Fires formations are being tasked to perform in-lieu-of missions that do not necessarily exercise the Fires system. At the same time, our entire Army is experiencing exponential technological advancement. It has been suggested that the sum of all knowledge doubles every seven years.

This fact, combined with a high operations tempo and continued assignment of in-lieu-of missions to our Artillerymen, led to a situation where our Soldiers coming from the "schoolhouse" are often the most current and most technically proficient in the unit. It is for this reason the FACP called for raising the competency of the student leaving the "schoolhouse" to a level of "mastery" vice "proficiency." Our challenge is exacerbated by the reality that time available to train and educate our Soldiers at the institution is limited.

While the maneuver commanders continually praise our Field Artillerymen for their flexibility and adaptability, how do we ensure that our Soldiers are technically and tactically competent and confident in their core competencies? How can we ensure that they are well trained and capable of integrating Fires from our joint and coalition partners? We believe that the answer resides within a JFU that will train and educate Soldiers, Marines, Airmen, Sailors and interagency personnel to plan, integrate and employ lethal and nonlethal Fires and provide the necessary skills to enable them to be culturally aware and astute.

Students will be able to access JFU courses from the University at Fort Sill, another service school, a civilian university or even at home station.

The JFU. At the Association of the US Army Winter Conference, General Martin Dempsey, the Commanding General of the Training and Doctrine Command (TRADOC), stated, "We need to get into the business of how we deliver training and education, and the answer [cannot] be this is how we have always done it."

Recognizing the need to transform how we train and educate our Soldiers and leaders, the Fires CoE will stand-up the JFU. The JFU will provide a path to achieving the TRADOC Commander's number one priority of developing leaders. The JFU's concept is based upon a statement by the renowned educator Jean Piaget, "The principle goal of education is to create men and women who are capable of doing new things, not simply

of repeating what other generations have done". This statement is manifested in the Fires CoE CG directive to advance the nature of training and to develop more adaptive Soldiers, leaders and units capable of anticipating, integrating and dominating in full-spectrum operations. The JFU's core competency will be to train and educate leaders and Soldiers in the art and science of lethal and nonlethal Fires application and integration. The following is a proposal for the Joint Fires University vision and mission.

JFU Vision. Be the world's CoE for joint Fires. The JFU is the leader in providing education, training and development of experts in the art and science of lethal and nonlethal fires, producing Soldiers, leaders and units that enable the commander to dominate his environment through effective integration and application of joint and coalition Fires.

JFU Mission. Provide the highest quality training, education and development opportunities for leaders, Soldiers and joint and coalition personnel in lethal and nonlethal fires planning, integration, and application to support full-spectrum operations. Develop and export unit training products and provide training support to units to achieve readiness in essential Fires capabilities. Develop and sustain the infrastructure and materials to support life-long learning for the institutional, self-development and operational training domains. The JFU Concept is shown in Figure 1.

Tenets of the JFU. Foundational to the JFU is the notion of life-long learning. The 2008 Army Training and Leader Development Strategy states, "Learning in the Army is a career-long process. Training and education in the institution and in the unit cannot meet the needs of every individual. When preparing for current operations or full-spectrum operations, Soldiers and civilians must continuously study Army and joint doctrine, lessons learned, observations, key insights and best practices. Commanders and other leaders create an environment that encourages subordinates to maximize self-development as an investment in their future."

This imperative recognizes the reality that, in this Era of Persistent Conflict and incredible change, the only way that an individual can keep pace is to take ownership for continuous learning. The model of the past was an instructor-centric/institution-centric model where students came to the institution to receive the training and knowledge needed for the next phase of their careers.

Learner-Centric Approach. Today's reality necessitates a learner-centric approach, facilitated by instructors who guide and enable a student's continuous learning rather than "teach the test." Army learners may be at the institution, may reach back from their residence, or participate from their units at home station. The JFU will facilitate life-long learning with a 24/seven reach-back capability. Mentors, instructors and other students will be available to help learners with their training and education needs. The JFU will merge technology with cutting-edge training and education methodologies to create an ethos and culture of Fires mastery through excellence in training and education. Figure 2 illustrates the difference between instructor-centric and learner-centric capabilities.

JFU Instructors. The JFU will be a venue in which students will be provided access to others who are experts in their fields. These expert instructors will come from a variety of sources, to include joint and coalition nations, tactical units, academia and the Research and Development community. The JFU will seek to match expertise to the needs of each student.

For example, in the case of a student who is learning about a specific system, who better to provide expert system instruction than the program manager charged with developing and fielding the system? In the case of joint, interagency, intergovernmental and multinational organizations, the JFU, in partnership with the Combined Arms Center (CAC) at Fort Leavenworth, Kansas, will seek to establish partnerships with other agencies for the purpose of exchanging students, instructors and knowledge.

The JFU will have to adapt its staff and faculty requirements and hire experts, both civilian and military, as required. Partnering with civilian and other service universities will be a critical effort. As an example, the Fires CoE is in the process of hiring two cultural advisors who will be charged with the integration of cultural training and education into the Fires CoE curriculum.

A goal of the JFU will be to empower the staff and faculty. Adult learning theory outlines that those who learn best are those who take responsibility for their own learning and who are given an opportunity to reflect and dialogue during the training and education process. We will accomplish this by recruiting the finest leaders from the field and increasing the training, education and certification of those who will serve as instructors. They will be provided the tools to act as mentors and facilitators of learning. This will be accomplished through the training and education that our instructors receive

- Develop an adaptive, interactive learning organization committed to currency, relevancy and the contribution of knowledge to the joint Fires community.
- Select, educate and empower a certified and professional staff and faculty to achieve the vision, mission, objectives and goals of the JFU.
- Implement inquiry-based learning and other adult learning methodologies that enhance skill proficiency and maximize the development of adaptive and intuitive leadership and decision making.
- Train Soldiers for certainty and educate and develop Soldiers and leaders who are prepared for chaos and who are effective in uncertainty.
- Create a learning environment that supports the understanding of joint interdependence and implications of the strategic, operational and tactical levels of war.
- Foster an environment that mandates and enables life-long learning with students accepting personal responsibility for their continued training and education.
- Inculcate the Army values into all training, education and leader development to develop leaders of character.
- Establish and maintain a research and development outreach capability to rapidly inculcate lessons learned from current operations and provide impetus to continued technological advancement.

Figure 1: The Joint Fires University (JFU) concept embodies these principles.

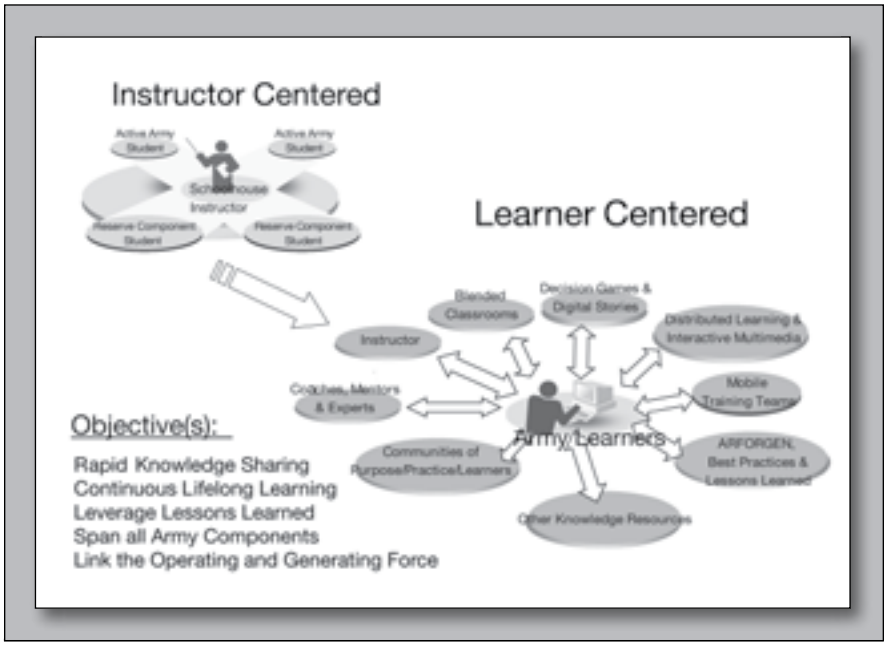


Figure 2: The Difference between Instructor-Centric and Learner-Centric Capabilities

when they arrive at the "schoolhouse" and by the mentorship they receive from senior master instructors.

As a part of this effort, preparatory courses for instructors are being redesigned. Ultimately, our instructors, acting as facilitators, will use instructional methods that emphasize reflection during the learning process coupled with technical and tactical expertise to raise the understanding of students. The intent is to ensure that the "best of the best" are hand picked to instruct at the JFU. So, not only will the JFU seek to train and educate to a level of "mastery" for all students, it will create master instructors who are acknowledged as experts in their fields as well as experts in adult learning.

The process of developing a cadre steeped in the art of facilitated learning through reflection has begun already with the help of the Asymmetric Warfare Group (AWG). AWG has been training the staff and faculty at Fort Sill in the techniques of Outcomes-Based Training and Education (OBTE)—a marriage between task-based training and Socratic methods. OBTE has been shown to increase task proficiency and to enhance the level of students' understanding. OBTE is just one of several techniques that the faculty will employ at the JFU.

Virtual Learning. Another tool that JFU instructors will have at their disposal will be avatar-based virtual worlds where students, both as a part of their daily curriculum time and on their own time, will be able to navigate tactical and garrison scenarios to exercise decision-making skills. For example, a "Virtual Platoon" interactive game concept is under development that will take the platoon leader through life in garrison, field training and pre-deployment, deployment and post-deployment phases.

This game will exercise a lieutenant's decision-making abilities and overall knowledge of Army programs and support systems by immersing him in a variety of complex scenarios. The lieutenant will receive feedback about his decisions from avatar mentors or his JFU instructors. In many cases, the lieutenant will be forced to deal with the consequences of his decisions and reflect upon how he could have done better.

The intent is simple—to broaden the lieutenant's base of experience by leveraging gaming technology, and as Malcolm Gladwell states in his book, *Outliers: The Story of Success*, start our junior leaders on their "10,000 hours" of practice to achieve mastery by leveraging gaming technology early in their professional education experience.

The JFU also will leverage emerging technologies for live, virtual and constructive (LVC) training and education. Gaming and simulations will enable the JFU to provide immersive scenarios that will allow students to make decisions and exercise Fires systems. By leveraging gaming and simulations, we will be able to broaden the students' experience base, fostering their intuitive decision making abilities.

Additionally, LVC provides an opportunity to link the operational, institutional and self-development domains. By using these kinds of technologies, we can link students in the classroom with a unit in the field while other students participate from home. To this end, we are exploring collaborative opportunities with both industry and civilian universities.

For several years, we have worked with local industry and the Institute of Creative Technologies, a subsidiary of the University of Southern California, to develop the Joint Fires and Effects Training System. Another example is being coined as the Red River Alliance. The Red River Alliance is collaboration between Fort Sill, the University of Texas and the University of Oklahoma to develop virtual training and education capabilities.

Educational Outcomes. JFU instructors also will use methods that civilian or other military universities use where students are asked to use inquiry-based or problem-based learning. Through active facilitation, instructors will ask students to discuss and resolve strategic, operational and tactical problems. In some cases, the students will be required to defend their solutions through oral debates. Other training events may require a reflective essay written so as to be published in a professional journal. None of these methods will be exclusive to the others; the sum of these methods will lead to a university experience enabling students to develop the capability for reflection and critical thinking.

The JFU will not achieve this vision in a vacuum. Partnering with civilian universities, as part of the Fires CoE outreach strategy, will be a key to success. The University of Texas-El Paso (UTEP) provides an opportunity for captains attending the Air Defense Artillery (ADA) Captain's Career Course (CCC) to take master's degree level classes while attending the CCC, enabling the captain to earn a master's degree in organizational leadership. UTEP will extend this opportunity to both FA and ADA officers when the ADA School moves to Fort Sill.

Additionally, Cameron University in Lawton, Oklahoma, is developing a master's program in strategic and organizational leadership that is intended to help officers attending CCC take classes that will provide insights into the consequences of decisions at the strategic and operational levels. We intend to

PFC Justin Graves, a cannon crewmember assigned to B Battery, 1st Battalion, 319th Airborne Field Artillery Regiment, 82nd Airborne Division, yells and gives encouragement to his Iraqi national police partner during a joint operation, Iraq, 30 March. Multiple in-lieu-of missions such as this one have created a need to address gaps in core-competency skills. Joint Fires University would help address these gaps. (Photo by SSG Matthew Lima)

pursue the same kinds of partnerships for NCOs to enhance their educational opportunities while providing additive education that fosters their military skills and knowledge.

Mobile Training Teams. The JFU is committed to preparing leaders and Soldiers for operational success. As part of our effort, we established mobile training teams for the purpose of conducting individual- and section-level training at home station. Additionally, we have established a collective training and evaluation team to provide staff training and certification for brigade combat team and below.

The JFU will export courses to the field. For example, there are a number of courses with a high density of personnel at a given location who would benefit from the course coming to them instead of their coming to Fort Sill. An example is the Joint Fires Observer Course, where the Army has a requirement to train a significant number of Soldiers to meet the Army's operational needs.

It is logical that JFU would bring just-in-time training to Soldiers saving both money and time. The life-long learning infrastructure of the JFU will provide a robust mechanism for units to reach-back to the university for training support packages, lessons learned, doctrine and emerging tactics, techniques and procedures. The JFU and its knowledge management resources will provide the operational force with real time access to Fires knowledge and expertise.

Electives. As a part of providing just-in-time training and education, JFU will seek to provide students more choices based upon their needs and the needs of the services. This will be accomplished by providing electives in the same manner that Command and General Staff College, Fort Leavenworth, Kansas, offers electives for majors attending intermediate-level education (ILE).

If a captain knows that he will be working with electronic warfare, it is logical that he may enroll in a follow-on Army Operational Electronic Warfare Course as part of his CCC experience to posture himself for success in his next assignment. Taking this logic a step further, as the JFU establishes relationships with both civilian and military universities, students may find themselves taking a course from another school as an elective for their JFU course.

Cultural awareness training provides an excellent example; two of the universities catering to students at Fort Sill currently offer classes in cultural awareness. Our intent is that these classes become electives for courses provided by the JFU.

Reserve Component. The JFU is not focused exclusively on the active Army. Those charged with developing and implementing the JFU strategy are working closely with Army National Guard (ARNG) representatives to leverage the significant training and education capabilities of the ARNG. The ARNG Regional Training Institutes (RTIs) are ideal "extension campuses" for the JFU (See "Education for ARNG FA Officers and NCOs" by COL Robert W. Roshell and LTC Lawrence M. Terranova in the January-February edition of *Fires*).

As we move down the road of JFU, we very well may see both active Army and Reserve Component (RC) Soldiers attending JFU courses at an extension campus that is tied to an RTI. Additionally, the JFU, like the Field Artillery School, will strive to provide equivalency in the curriculum between the active Army and RC. The methods of delivery may differ, but the JFU will seek to ensure that RC Soldiers have the same opportunities as their active duty counterparts.

How do we get there? A vision for the JFU is proffered. The question "how do we get there" now presents itself. As the ADA School and FA School come together at the Fires CoE, so too will we come together to form the JFU. The concept and strategy has been embraced by senior leaders at both the FA School and the ADA School.

A working group consisting of members from both schools has been stood-up to develop an implementation plan. This working group identified the goals and tasks necessary to achieve the JFU and laid out a phased approach to achieving the JFU. Many of the initiatives, such as the Red River Alliance and OBTE, are a direct result of the group's efforts to operationalize the JFU vision.

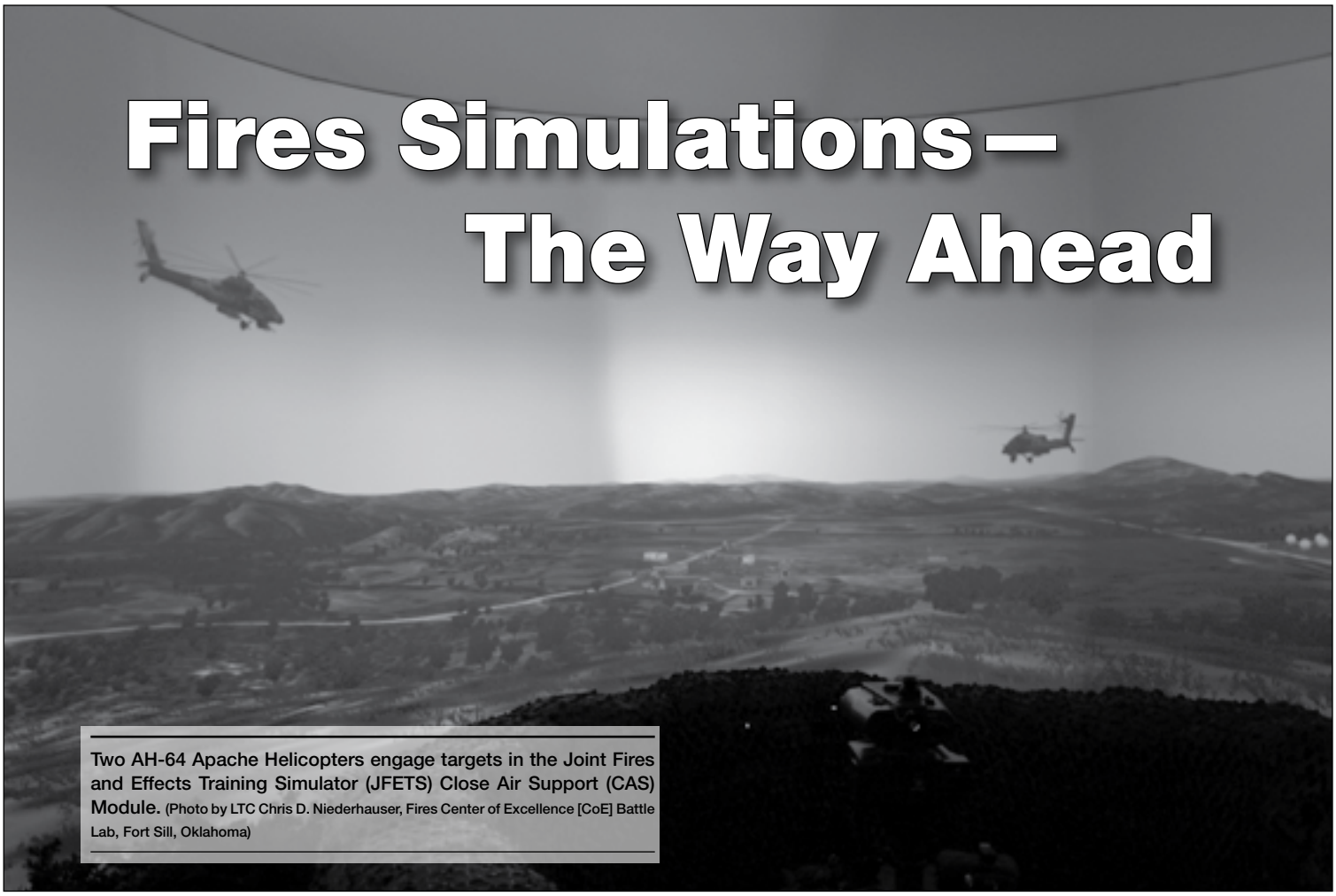
Our next step will be establishing the JFU Board of Directors. This Board will provide oversight for the development of the structure, the processes and the strategies for the JFU. This Board will identify the resources requirements and integrate the training resource capabilities of the Fires CoE to achieve the JFU.

Additionally, this Board will be charged with developing the strategies that lead to the development of experts in joint lethal and nonlethal Fires, perhaps even the creation of a master's degree in joint fires, much the same as the Master of Military Art and Science at ILE. Finally, the Board will champion the JFU culture.

The JFU culture will serve as the catalyst for the transformation of training and education and will enable Fires leaders and Soldiers to be agile and decisive—anywhere, anytime—in this Era of Persistent Conflict.

Major Alvin W. Peterson, United States Marine Corps (Retired), is the Chief of Training Development, Directorate of Training and Doctrine, Fires Center of Excellence at Fort Sill, Oklahoma. Previously, he was the Course Manager for the Army Operational Electronic Warfare Course. He also has served as Chief of the Cannon Division, Gunnery Department; and a Small Group Instructor at the US Army Field Artillery School, both at Fort Sill. As a Marine, he served as an Inspector-Instructor, M Battery, 4th Battalion, 14th Marines; a Liaison Officer for 1st Battalion, 10th Marines; and Battery Commander, B Battery, 1st Battalion, 10th Marines, at Camp Lejeune, North Carolina; and as a United Nations Observer deploying in support of the Iraq-Kuwait Observer Mission.

Fires Simulations—The Way Ahead



Two AH-64 Apache Helicopters engage targets in the Joint Fires and Effects Training Simulator (JFETS) Close Air Support (CAS) Module. (Photo by LTC Chris D. Niederhauser, Fires Center of Excellence [CoE] Battle Lab, Fort Sill, Oklahoma)

By LTC Christopher D. Niederhauser, FA57

Since the 1980s, Fort Sill, Oklahoma, has been a leader in simulations development to support Field Artillery (FA) training. The Fires Battle Lab (previously named the Depth and Simultaneous Attack Battle Lab) was the first to identify a need to develop an interface that translated simulations' messages into tactical messages to stimulate Advanced FA Tactical Data System (AFATDS) for training. This led to the development of the Enhanced Protocol Interface Unit that enabled Artillery staffs to train in a "free play" simulated environment on a large scale. This first step into "doing the impossible" has provided immeasurable benefits to the Army and Department of Defense.

Today, the Fires Center of Excellence (CoE), again, is leading simulations development on many fronts and is on the cusp of providing enhanced training capabilities. This article examines some exciting capabilities that the Fires CoE either has available or is developing to give commanders a capability to train their Soldiers and staffs.

Simulations Integrated Product Team. In September 2008, Fires CoE chartered a Simulations Integrated Product Team. This team has two initial initiatives. First is the development of a strategic plan that includes all Fort Sill and subsequent Fires CoE stakeholders. Second is an organization review and development of recommendations for the optimum management and planning of simulations. To date, the team completed the organizational recommendations and an initial gap analysis. From this analysis, four key gaps are highlighted.

First, FA organizations lack the ability to train leaders and staffs, fire support teams, command and control, weapons systems and radar and meteorological systems simultaneously in a mutually supporting, fully interactive, realistic, immersive training environment on the full spectrum of fire support operations and tasks. Second, the Fires CoE does not have the capability to conduct distributed individual/collective training within classified and unclassified environments for initial entry, pre-deployment and sustainment training. Third, leaders do not have the ability to exercise cognitive decision-making tasks in a semi-immersive environment. Finally, Soldiers do not have the capability to apply varying factors as they pertain to Artillery gunnery and see the ballistic effects in real-time outside of a live environment.

Closing the Gaps. Given the above gaps, the Fires CoE is working diligently to use off-the-shelf capabilities to close the gaps rapidly and investing in technologies where capabilities do not exist already. The Fires Battle Lab staff is working on three initiatives currently.

Integrated Fires Simulated System. Integrating the Fire Support Combined Arms Tactical Trainer (FSCATT) into a networked-training architecture was the first step to merge current technologies into a training environment. Developing a message translator to bridge FSCATT and AFATDS allows an observer in the Call For Fire Trainer (CFFT) or Joint Fires and Effects Trainer System (JFETS) to link digitally to the FSCATT.

This digital capability from the observer to an AFATDS expands the com-

A platoon is created in the Army's newly fielded Virtual Battlespace 2 game, a virtual training game similar to the Virtual Platoon game being developed. (Photo by LTC Chris D. Niederhauser, Fires CoE Battle Lab)

mander's ability to develop an exercise that simultaneously trains observers, crews and staffs in a live, virtual and constructive environment. As the FSCATT is updated with current software, we will have an even greater capability to use that system in an integrated training environment. Although this is a great start, we must continue to bring other cannon and rocket systems, as well as radars, into the integrated-training environment.

Distributed Capability. Developing a distributed capability will enable Fires Soldiers to train as part of the BCT. Fires Battle Lab participates in an exercise that networks the JFETS and CFFT to an Aviation Combined Arms Tactical Trainer (AVCATT) at Fort Rucker, Alabama, and the Close Combat Tactical Trainer (CCTT) at Fort Benning, Georgia. In addition to demonstrating a capability to link these simulations in a common scenario operating in real-time, we will try to have a forward observer in JFETS lase targets for Hellfire engagements from AH-64D Longbow Apache and OH-58KW Kiowa Warrior helicopters.

Deployable and Exportable Training Systems. Making our training systems deployable and exportable will put training capabilities where they are needed, when they are needed. To support Reset training, the Fires CoE, in partnership with Creative Technologies Inc., developed a mobile training platform to deliver training to Soldiers where they need it.

Gaming Trainers. In coordination with the Training and Doctrine Command (TRADOC) Capabilities Manager-Gaming (TCM-G), the Fires CoE provided requirements for the development of Virtual Platoon and Ballistic Concepts Trainer games. These games will provide "virtual training" to leaders on a variety of scenarios they will face during their careers.

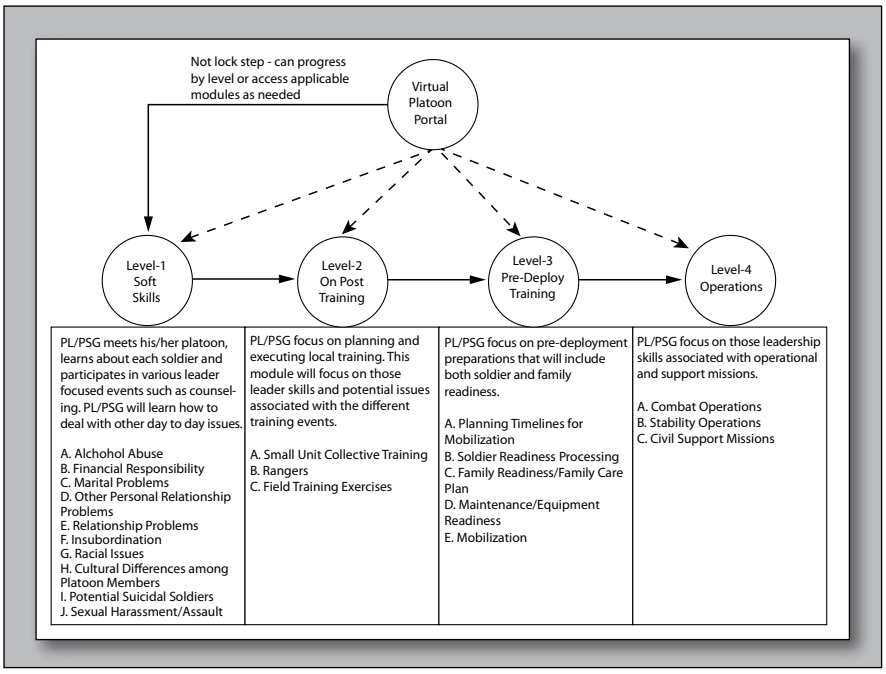
The Virtual Platoon Game. The Virtual Platoon game's concept is a lieutenant, upon his arrival to Basic Officer Leaders Course (BOLC), literally is assigned a platoon that is replicated within the game. This platoon would present all of the challenges a new lieutenant might encounter in his first assignment and beyond. These challenges include discipline problems, training challenges, deployment preparation and even planning and rehearsal for training and combat operations. The figure highlights some of the situations faced in the game.

The Virtual Platoon game would be scalable and progressive in design. A junior officer will interact with virtual characters in the game, supported by artificial intelligence technology. These virtual characters will represent the members of his virtual platoon and key higher headquarters personnel that serve as automated "assistant instructors" as the officer progresses through various scenarios.

The scenarios vary in difficulty and purpose; beginning with interacting with his platoon leadership, developing training plans and managing time. Gradually, the officer progresses to other scenarios where he plans live-training events and conducts rehearsals for these events within the game on geographically-specific terrain. And finally, the officer could use the game to plan and rehearse tactical operations.

Key to this game's concept is linkage within the game to the "assistant instructor" that would provide feedback, guidance and instruction to the officer, relating to certain task performance and decisions the officer made during various scenarios. The game will be a deployable software product that goes with the Soldier and will be linked to the Fires Knowledge Network online where content managers would provide automatic updates to training scenarios and vignettes. Additionally, officers could upload training plans and scenarios that they have developed during their use of the gaming tool.

Ballistics Concepts Trainer Game. One specific initiative currently under analysis and development is the Army Artillery Ballistics Concepts Trainer that addresses the need for junior officers to develop and master ballistics concepts and visualize the effects of inputs on munitions' accuracies. The Fires CoE Directorate of Training and Doctrine (DOTD) is working with TCM-G and private industry to develop a gaming technology that will address this



The Virtual Platoon simulation game teaches a platoon leader (PL) or platoon sergeant (PSG) what leading a platoon entails.

This example fires cell enables units to use training center or unit battle command systems with simulation. (Photo by LTC Chris D. Niederhauser, Fires CoE Battle Lab)

requirement. When fully developed, this technology will be available for distribution to FA users at institutional and operational units at home station and while deployed.

Engagement Control Station Simulation (ECS²). The ECS² is an immersive training technology solution under development between the Air Defense Artillery School Directorate of Training, Doctrine and Leader Development and the University of Southern California's Institute for Creative Technology. The ECS² will use a combination of immersive simulation and digital classroom technology to develop leaders with the cognitive skills required for Patriot system operations. The system is designed to allow leaders to develop and execute courses of action and understand the consequences of those actions based on their awareness of what is occurring in the operational environment.

Replication of Fires (RoF). Looking further into the future, the Fires CoE is engaged with Program Executive Office for Simulation, Training and Instrumentation (PEO-STRI) and the National Simulation Center to ensure the replication of effects. Historically, US Army combat training centers (CTCs) understated battlefield effectiveness of Fires resulting in under usage of Fires. So, Fires Battle Lab and Fires CoE developed Replication of Fires—the mathematical methodologies needed to assess the effects of Fires (both damage and suppression) realistically for CTC training environments.

Successfully integrating RoF at the National Training Center (NTC), Fort Irwin, California, essentially "corrected" the commanders' perceptions and usage of Fires. Fires Battle Lab and Fires CoE are following their NTC success by working with modeling and simulation developers at PEO-STRI to implement the RoF methodologies in the modeling and simulation tools/technologies involved in future Fires assessments for all CTCs and home station training. These tools include Objective Instrumentation Systems, Home-station Instrumentation Training System and One Target Engagement Sub System.

Fires Battle Lab and Fires CoE must continue to monitor and influence related modeling and simulation developments to ensure realistic Fires and effects for all combat training. Many modeling and simulation initiatives depend on seamless interoperability of Soldiers, machines and simulations. Fires Battle Lab is called upon often to construct live/virtual/simulated environments that allow real-world Soldiers employing real-world tactical hardware/software to interface with simulation federations.

These modeling and simulation interoperabilities are necessary to support field training, future force integration, future concept experiments, special lab experiments, etc. Army tactical systems are extremely complex and dynamic; software versions can change often and drastically. Fires Battle Lab and Fires CoE must stay vigilant to ensure that fundamental modeling and simulation interoperabilities are identified, developed, tested and established well in advance of the tactical systems encountered. Otherwise, our live/virtual/constructive simulation environments cannot be established in the timely manner required. FireSim XXI and Extended Air Defense Simulation (EADSIM) are applied widely due to the tactical interoperabilities they now enjoy. However, we must continue to invest time, energy and funds to maintain these basic and critical modeling and simulation infrastructures proactively.

The Fires CoE continues to be a leader in the development of simulations for training, analysis and experimentation. The Fires CoE will continue to push the envelope in simulations development with the technological breakthroughs we achieve through the development of immersive simulations, such as JFETS or a game that enhances a Soldier's understanding of ballistic theory.

Our ideas can keep pace with and sometimes outrun the technology, but we need your help to keep pace with the ever-changing operational environment and tactics, techniques and procedures. Your feedback is the most important aspect to our simulations development, so we can fill the gaps to help you achieve your objectives. In the end, the Fires CoE wants to provide an integrated live-virtual-constructive training solution for our Fires team.

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The author wishes to thank the following for contributing to this article: Ms. Susan I. Walker, Deputy Director; Mr. Johnny L. Horn, Chief of Constructive Simulations Branch; and MAJ Nathan T. Sammon, Deputy Chief of Simulations Division; all at the Fires Battle Lab.

SPC Harry Graham and WO1 Chad Cavender, 2nd Battalion, 319th Field Artillery (2-319 FA) (Airborne), 82nd Airborne Division, call for fire on a suspected weapons cache during a terrain denial mission, Iraq, 11 June 2007. (Photo by SGT Jeffrey Alexander)

FA Officer Manning SITREP

By CW4 Dorian K. Brunson; Mary Patrick; Majors Joshua R. Richardson, Julian T. Urquidez, John J. Montgomery, Kevin R. Taylor and Robert Wright; and Lieutenant Colonels Andrew C. Gainey and Michael J. Gould, all FA

In light of the annual Fire Support Seminar, Field Artillery (FA) Branch at Human Resources Command (HRC), Alexandria, Virginia, is providing this "situation report" (SITREP) from our "foxhole" on the state of our officer corps and a sense for the trends and perceptions from the field. In many ways, this has been a good year for FA. Exceptional accessions from US Military Academy (USMA), Reserve Officer Training Corps (ROTC) and Officer Candidate School (OCS) and a leveling off of attrition at all ranks increased our manning strength. Battalion command opportunities are strong, and selection rates remain extraordinarily high through colonel. Additionally, HRC has been successful in providing more opportunities for officers to serve in broadening assignments and more choices in assignments overall.

Despite these positive trends, challenges remain. Our inventory of officers, particularly at the captain and major grades, continues to be significantly less than our authorizations and requirements. This continues to strain our generating force; Training and Doctrine Command, combat training centers (CTCs), active Army, Reserve Component and other organizations across the Army that train and prepare our officers to serve.

These challenges are not unique to FA, nor are they fleeting; they will be with us for the foreseeable future. Upcoming changes and reorganizations in Operations Enduring Freedom and Iraqi Freedom will put additional strain on the force in the short term, but should provide some relief in the long run to help bring us back into balance.

During the past year, HRC informally kept track of trends and perceptions from the field to share with senior leaders and to help us improve our tactics, techniques and procedures (TTPs) as assignment officers. FA Branch managers' mission is to meet Army requirements and serve Redleg officers. We take that mission seriously and continuously adapt to demands of the Army's and officers' needs.

This article is an update from each HRC officer assignment desk to inform the Fire Support Seminar attendees and add to the dialogue.

Warrant Officer (WO) Assignments. FA WOs are the fastest growing and most diverse group of officers in the Field Artillery. They are the most frequently

deployed FA officers, and they continually perform at an extremely high level of proficiency. There are roughly 400 WOs in FA, and the demands for their abilities are being solicited across all echelons of the Army and unconventional forces. Lately, HRC has received questions about the assignment process, unit strength, career progression and operational tempo (OPTEMPO).

HRC looks at each officer's assignment request individually. It considers the needs of the Army, availability, career development and officer preference. No two requests are the same. The FA warrant assignment desk currently is faced with a difficult challenge.

The FA WO corps is under-strength. It is at 75 percent of its authorized strength, including deployed units. HRC has been directed to maintain this unit-fill percentage across the force. Therefore, when an officer is reassigned, we must ensure that the prospective unit does not drop below 75 percent.

Occasionally, units are above that percentage because of stop-loss/stop-move, life-cycle management, dwell time, the exceptional family member program (EFMP) and time-on-station. At times this becomes a one-for-one swap, trying to match ranks, experiences, professional development and time available to move. HRC continues to work with the officer to meet the Army requirement and the officer's needs.

Lately, our officers have been faced with inhibited career progression due to modularity, having no senior FA leader oversight at division level and because brigades are deploying independently. Our officers are caught between changes-of-command and units with quick redeployment timelines. To mitigate this, HRC continuously engages with brigade combat team (BCT) commanders to allow these officers to move up to divisions and corps to get the professional development they need. With constant communication, it is beginning to succeed.

OPTEMPO is on the minds of our officers. To minimize the stress of back-to-back deployments, HRC uses temporary duty assignments to allow officers to regain some stabilization and rebuild some solidity within their families.

Overall, the perception from the field is good. HRC keeps the lines of communication open and receives effective feedback, while distributing relevant information in a timely matter. HRC strives to place the right officer into the right position at the right time.

Lieutenants. The newly accessed lieutenants are smart, energetic and very intelligent. Each one brings his unique ideas and experiences to the Branch and the Army to make a difference in the War on Terrorism (WOT). HRC provides information to the lieutenant population concerning anything from, "when will assignment and orders be released" to "what classes will I attend?" to "where will I live while attending BOLC?" Feedback from the field continues to be positive from the officers and their leaders.

Lieutenants attend Basic Officer Leader Course (BOLC). BOLC consists of three phases. Phase I, conducted by the commissioning sources (USMA, ROTC and OCS), provides supporting skills—knowledge that gives the lieutenants a foundation. Phase II, is taught at Fort Sill, Oklahoma, and Fort Benning, Georgia. All lieutenants attend this six-to-seven week course that teaches leadership development—much of this course is conducted in the field environment. Phase III is a 15-week training course that teaches the tactical and technical training at the branch schools (Infantry at Fort Benning, FA at Fort Sill). Some lieutenants attend a two-week Assignment Orientation Training (AOT) Course focused on the type of their assigned unit.

Additionally, lieutenants have the opportunity to attend Airborne and Ranger schools en-route to their assignments. A Pre-Ranger Program at Fort Sill has helped improve the number of lieutenants who compete and graduate from the intensive eight-week Ranger course. OCS graduates also have the opportunity to attend a university to complete their bachelor's degrees under the Army Degree Completion Program (DCP) for a period of 12 months to 18 months.

Lieutenants are accessed into the Army as regular Army officers for three to four years for ROTC and OCS graduates and five years for USMA graduates. Second lieutenants are promoted to first lieutenants at 18 months time-in-grade. Junior and senior lieutenants are eligible for the captain Army Competitive-Category Promotion Board based upon their first lieutenant dates of rank.

Junior Captains. This past winter, the Vice Chief of Staff of the Army directed HRC to get more officers to Professional Military Education (PME) and sooner, especially to the Captain's Career Course (CCC). During the past seven years, many officers' career progression has been disrupted due to the OPTEMPO associated with WOT. This policy change will reduce the back-log of officers who need to attend CCC and will balance the population of company-grade officers within units better. Additionally, it provides predictability to junior officers and their leaders.

HRC mandated FA Branch to slate junior captains and promotable first lieutenants for CCC attendance within 180 days of their redeployment dates. This affords officers a 90-day stabilization period before a permanent change of station (PCS). Additionally, it allows officers to PCS during a unit's Reset period so that back-fills can arrive (in this case, CCC graduates) before the unit's next deployment.

Feedback from junior officers and their leader in the field reveals several concerns. FA battalion commanders are concerned that their young officers

1LT Donald J. Frisco, 5-82 FA, 4th Brigade Combat Team (BCT), 1st Cavalry Division, paddles down Victory Canal in search of criminal smugglers during Operation Chattahoochee, Iraq, 18 March. (Photo by 1st Lt. Bryan Hammond, 4th BCT, 1st Cavalry Division Public Affairs)

CPT Matthew Tarazon, 1-319 FA (Airborne), 3rd BCT, 82nd Airborne Division, speaks with Lt. Col. Muhammed of the Iraqi national police, preparing to conduct a joint inspection of Iraqi Security Forces checkpoints in Karada, eastern Baghdad, Iraq, 18 March. (Photo by Staff Sgt. James Selesnick, Joint Combat Camera Center Iraq)

are not being afforded the opportunity to serve in multiple developmental assignments as lieutenants. This is a valid concern that units must mitigate by disciplined officer management at the battalion and brigade levels.

Holding officers in order to "keep them on the team" causes several problems. First, statistics show that junior officers who deploy more than once with the same unit before attending CCC have a higher attrition rate. Secondly, these officers are promoted to captain, yet remain in traditional lieutenant billets (platoon leaders, company fire support officers [FSOs], etc.). Finally, a delay in CCC attendance limits the number of post-career course, key developmental jobs they can serve in, which directly affects their chances of being promoted below-the-zone to major.

The other concern stemming from early placement in FACCC comes from junior captains, themselves. Many feel that they will be unprepared to command at the battery level or perform as battalion FSOs due to a lack of experience on the gun line or as company FSOs.

The Fires Center of Excellence at Fort Sill has developed several initiatives to mitigate these concerns. The FACCC has been expanded to six months and now includes a Reset phase that focuses on the weapon system that officers will serve on after graduation. Additionally, there are numerous schooling opportunities now available to FACCC graduates: Ranger, Airborne, Pathfinder, Joint Firepower Control, Joint Fires Observer, Electronic Warfare, Fire Support Coordinator, Survival/Evasion/Resistance/Escape and Joint Fires and Effects courses.

These courses, when combined with the five-week gunnery program of instruction (POI), the two-week Reset POI and the four-month small group POI, effectively serve to "re-Red" FA officers on their core-competency tasks. Initial feedback from students and instructors at Fort Sill validated the effectiveness of this training. Competent officers are arriving at their follow-on duty stations confident that they will be able to serve successfully in any billet assigned.

Senior Captains. In the many emails HRC receives, the field's perception is that post-command FA captains want an assignment that provides an opportunity to get off of the line and reconnect with family and other personal goals—essentially their first chance in a career that is approaching the 10-year mark. Although it is clear that the pace of current operations is taxing, these professionals are overwhelmingly positive and show a mature understanding of the "big picture" and the challenges that the Army faces.

Some of the negative feedback stems from officers not getting assignments of their choice. Competitive fellowships/scholarships and other nominative programs represent a multitude of ways for an officer to take ownership of their post-command assignment (beyond what HRC could normally offer). Opportunities such as Joint Chiefs of Staff (JCS) Internship, Congressional Fellow, Olmstead Scholar, Downing Scholar and USMA instructor/tactical officer assignments offer superb broadening experiences and are ways to expand upon the options that HRC has available.

The good news story continues to be the quality of senior FA captains across the Army. As evidence, FA had two captains selected as JCS Interns for fiscal year 2009 (FY09), one selected as a Congressional Fellow for FY10, two competing at the final level for the Olmstead scholarship and many selected as professors and tactical officers at USMA. In addition, FA has begun to fill battalion FSO positions at all 16 Special Forces battalions at the behest of US Army Special Operations Command commanders. In general, as HRC reassigns senior captains across the force, BCT (and higher) commanders routinely fight to retain Artillerymen for second commands—often commands traditionally reserved for maneuver branches. The quality of the 13-series senior captain is a well-known, rare commodity.

Majors. The current FA major population roughly consists of 750 Redlegs from across the force. Daily interaction with these officers provided HRC with candid feedback regarding past, current and future assignments. HRC also confirms or denies rumors about the assignment process and current trends and opportunities reference Intermediate Level Education (ILE) attendance and key developmental time.

Many officers are concerned about their career timelines and when they will attend ILE. Field Artillery Branch's goal is to have 100 percent of every year-group either ILE-complete or at least enrolled in the course before their primary zones of consideration for lieutenant colonel. ILE attendance is not determined by cohort year group, and there is no back-log for officers to attend ILE. The current OPTEMPO drives attendance to ILE.

For an officer to be "available," the officer must not be stop-move/stop-loss restricted, deployed or have less than 12 months time on station. If the officer is available, then he can be considered for attendance based on current manning guidance and the needs of the Army.

A typical class for FA consists of the entire spectrum of eligible year-groups. Officers have the option of attending ILE at Fort Leavenworth, Kansas, a foreign or sister service ILE or the blended learning course at multiple satellite campuses. Fort Leavenworth conducts two separate courses for ILE, one with a start date of August and graduation in June and the second course starting in February and graduating in December.

A Military Personnel (MILPER) message is released each year that addresses current policies and rules for competing for the foreign and sister service school opportunities. The blended learning course can be completed as a temporary duty (TDY) and return or a TDY en-route. The course allows the officer to complete the common core curriculum while TDY, and then the officer must complete the final phase (Army Operating Warfighting Course) via correspondence.

FA Branch will continue to slate officers based on current officer availability. Officers should contact their assignment officer approximately 10-12 months before their desired attendance dates to ensure proper coordination.

Department of the Army Pamphlet (DA-PAM) 600-3 is the Army publication that governs key and developmental time for FA officers. Questions always exist about "hard" versus "soft" key developmental time; those terms are not used or identified in DA-PAM 600-3. Per the current DA-PAM for FA majors, key developmental assignments consist of brigade/battalion executive officer and S3 positions, and deputy or assistant fire support coordinator at the brigade level or higher headquarters.

LTC Matthew Anderson, Commander, 2-8 FA, 1st Stryker BCT, 25th Infantry Division, greets a local Iraqi man running a food stand, Jaleel, Iraq, 30 December 2008. (Photo by SPC Opal Vaughn, 14th Public Affairs Detachment)

Most FA officers will have a mix of developmental assignments that will be different from their peers. Some officers may have multiple key developmental assignments and some, possibly, may have none. In either case, a hard working and dedicated officer will find career success and make a significant contribution to the success of FA. FA Branch will continue to assign officers to positions that afford them the opportunity to be assigned by the chain of command into key and developmental positions.

Lieutenant Colonels. Managing a little more than 420 FA lieutenant colonels, HRC routinely discusses assignments, promotion boards, school boards and numerous other topics. Lately, HRC has received both positive and negative feedback from FA lieutenant colonels, focusing on stability from the OPTEMPO and the assignment process.

Stability from the OPTEMPO. Numerous officers have been or are about to go on world-wide assignments that usually result in a deployment. After having deployed multiple times, many FA lieutenant colonels are ready to stabilize the family. The perception from the field is that lieutenant colonels cannot be stabilized in one location greater than 24 months. This is untrue.

Officers who have high school senior aged children, low dwell time and numerous other variables can submit a Department of the Army 4187 requesting to extend for 12 additional months. FA Branch decides on a case-by-case basis whether or not to approve the extension request. Most of the recent disapprovals were a result of surging requirements within FA Branch or the individual's lack of a world-wide assignment/deployment.

PCS Options and Locations. Most calls are from officers who are ready to move to their next assignment, but are frustrated with limited options/locations (division fire support positions, WOT requirements, Korea, etc.). Most of these officers have a "wish-list," and it does not sync with the assignments on the FA Branch Web site.

Unfortunately, FA Branch does not create the requirements on the Web site. We have an internal process for distributing assignments that is based on the Chief of Staff of the Army (CSA) guidance, driven by the HRC Distribution Division personnel. They prioritize all of the Army's needs and distribute them to each branch within HRC.

The officers who are less frustrated contacted FA Branch nine to 12 months out to work their follow-on assignment. This is important as it gives both the FA officer and assignment officer an opportunity to explore and plan all options realistically. Some of these officers planned early enough to compete for and get accepted to selection boards, such as professor of military science, fellowships and other nominative assignments.

The good news story continues to be the endurance of the senior lieutenant colonels within FA Branch. In times of multiple deployments and numerous PCS moves, our FA lieutenant colonels are finding ways to overcome adversity. Although we have seen high numbers of FA lieutenant colonels retiring at 20 years, we also are seeing a number withdraw their retirement packets to continue to serve in critical FA billets.

The Way Ahead. Communication, early and often, has been and remains the single best TTP for managing Army requirements, officer educational and developmental needs, and officers' preferences for assignments. FA faces significant challenges in the short term, but we at FA Branch are encouraged by the overall morale, quality and professionalism of the Field Artillery officer corps.

Lieutenant Colonel Michael J. Gould, Field Artillery (FA), is the Field Artillery Branch Chief and leads the Officer Personnel Management Directorate–Field Artillery Branch team at Human Resources Command, Alexandria, Virginia. The team consists of Chief Warrant Officer Four Dorian K. Brunson, FA Branch Warrant Officer Assignment Manager; Mary Patrick, FA Branch Lieutenant Assignment Manager; Major Josh R. Richardson, FA Branch Senior Captain Assignment Manager; Major Julian T. Urquidez, FA Branch Future Readiness Officer; Major Kevin R. Taylor, FA Branch Junior Captain Post-Career Course Assignment Manager; Major John J. Montgomery FA Branch Junior Captain Pre-Career Course Assignment Manager; Major Robert Wright, FA Branch Major Assignment Manager; and Lieutenant Colonel Andrew C. Gainey, FA Branch Lieutenant Colonel Assignment Manager.

1LT Paul Keller (Foreground), a Student at the Field Artillery Captain's Career Course (FACCC), Fort Sill, Oklahoma, listens to a description of the Reset block of the FACCC, 8 April 2009. (Photo by Jason Scott Kelly)

PME for FA Officers and Warrant Officers

By LTC Christopher P. Talcott, MAJ Cornelius L. Morgan and CW3 Scott W. McKnight, all FA

The "how" and "what" of educating Field Artillery (FA) officers and warrant officers (WO) is a hot topic within Training and Doctrine Command (TRADOC) and the US Army FA School (USAFAS) at Fort Sill, Oklahoma. The article "MTTs—Resetting FA Core Competencies" by CSM (R) Jeffrey L. Moyer written for the July-September 2008 edition of *Fires* Bulletin appropriately highlighted a need to restore core-competency training in our professional military education courses. CSM Moyer's article succinctly identified key challenges facing our FA leaders—skills atrophy due to multiple nonstandard missions and limited time to reset in the Army Force Generation (ARFORGEN) cycle.[1]

In direct support of the Chief of FA's FA Campaign Plan to Sustain Soldiers, Leaders, and Families, Win the Current Fight, Reset, and Transform for Future Operations, this article highlights how the officer and WO professional military education (PME) courses are adapting to balance the training and education requirements to produce a competent, confident and technically and tactically proficient FA leader.[2]

Outcomes Based Training and Education Environment (OBTE)—the How. PME for the Officer Education System (OES) at USAFAS has been "shifting fires" during the past year from Task, Condition and Standards training focused on teaching our leaders "what to think" to the OBTE philosophy, using the Adaptive Leader Methodology (ALM), which educates our leaders on the "how to think." Major (R) Don Vandergriff's instructional ALM focuses the learner on the "why" and encourages an interactive student-centered learning environment vice the traditional instructor-centered one.

Traditional instructor-centered learning (such as PowerPoint learning) uses demonstrations and lectures as the basis to impart knowledge.[3] In contrast, ALM focuses the instructor to use techniques that require the learner to participate actively in this process. Techniques like case studies, discovery learning, simulations, Problem-Based Learning (PBL) and Inquiry Learning are used in the classroom. The "product" we produce,

using ALM, are leaders whose learning creates higher cognitive level outputs (creating, evaluating and analyzing) vice lower cognitive levels (remembering and understanding).

With that, USAFAS and the institutional training that occurs at the Fires Center of Excellence at Fort Sill is committed to providing the best educational practices available to produce the Field Artilleryman who is military occupational specialty (MOS)-qualified and ready to provide lethal and nonlethal expertise to your unit. The rest of this article highlights FAOES courses as we evolve and develop the techniques necessary to incorporate ALM and keep these courses relevant and current in support of the current fight.

FA Captain's Career Course (FACCC). For the FACCC, the challenge is deciding "what" to educate Artillerymen on is exacerbated by the continued nonstandard missions. For fiscal year 2008 (FY08), almost 60 percent of the captains who attended the FACCC did not perform a traditional FA job. For our first two FACCCs in FY09 (Classes #1-09 and #2-09), the trend continues with half of the captains never serving as a fire direction officer, fire support officer or platoon leader.

Our challenge is the balance of common core competencies education (such as *Field Manuals 3-0 Operations, 5-0 Army Planning and Orders Production, 6-0 Mission Command: Command and Control of Army Forces,* and *7-0 Training For Full Spectrum Operations*) with the responsibility to reset our captain's FA core competency capabilities. Future changes to the FACCC are forthcoming within TRADOC with an emphasis of common core education being the majority of instruction and a smaller portion of time dedicated to branch specific technical or tactical training.

Nonetheless, the current FACCC executed a new 24-week program of instruction (POI) in January 2009, essentially expanding four weeks from an original 20-week course. This new course consists of three primary blocks of instruction: core competency block, lethal and nonlethal integration block and assignment oriented training block. Upon graduation from the course, officers, for example, have an opportunity to attend follow-on courses such as Electronic Warfare, Fire Support Coordination Course, Joint Forward Observer Course and the Joint Firepower Control Course.

The core competency block starts with three weeks of traditional gunnery (manual gunnery, automated, ballistics and troubleshooting). Following gunnery, the captains spend four weeks resetting their core-competency Artillery skills in fire direction, delivery systems and fire support. Battery command and leadership instruction are also a part of the core competency block and are taught early in the course as a foundation. The last focus of the core competency block is nonlethal operations which includes the embedded Tactical Information Operations Course.

The lethal and nonlethal integration block incorporates command and control, current hybrid combat operations (including Iraq and Afghanistan), the process of processes (such as the Military Decision-Making Process or MDMP) and stability operations. The intent is an officer who can take his expertise as an Artilleryman (core competency skills and battery command) and learn to integrate them as part of full-spectrum operations.

The assignment oriented training block is a week dedicated to the captain's next assignment. It provides an additional opportunity to spend time on specific weapon systems and focus on specific weapon-system maintenance. A portion of graduates will be slotted to serve as Iraqi or Afghan army advisors (military transition team members). We have a POI dedicated to get them focused on that fight as well with officers from Fort Riley, Kansas, coming to Fort Sill. The "product" of our FACCC is a captain ready to execute his job as a battalion fire support officer, battalion fire direction officer or battery commander.

FACCC Initiatives. FACCC education includes a greater emphasis on cultural understanding. Fort Sill employs outside university professors to educate captains. Most recently, a Middle East expert from Cameron University, Lawton, Oklahoma, conducted a lecture for FACCC. A second initiative includes media training. Students have the opportunity, in cooperation with the University of Oklahoma in Norman, to be videotaped conducting a media interview with a media student. This gives the captain an opportunity to be critiqued by the civilian interviewer from a civilian perspective and by a small group leader from a military perspective.

Another initiative is a strong relationship with the combat training centers (CTCs). Examples include collaboration on the publication of the Fire Support Whitepaper, November 2008, and we currently are working an FA Operations Whitepaper. Additionally, FACCC small group leaders routinely visit the Joint Readiness Training Center (JRTC), Fort Polk, Louisiana, or the National Training Center (NTC), Fort Irwin, California, quarterly to capture lessons learned and

CPT Ashton J. Read, Commander of A Battery, 2nd Battalion, 82nd Field Artillery, 3rd Brigade Combat Team, 1st Cavalry Division, Fort Hood, Texas, is interviewed by The Military Channel, 3 June 2008. The FACCC provides an opportunity for students to be interviewed by college media students to prepare for future media relations. (Photo by PVT Sharla Perrin)

current trends and tactics, techniques and procedures (TTPs) to be taught at the FACCC.

Basic Officer Leadership Course III (BOLC III). This 15-week and four-day course evolved drastically during the past six to eight months. New education initiatives include nonlethal skill development in information operations and company intelligence support teams capable of intelligence, surveillance, and reconnaissance planning; patrol pre-briefings and debriefings; and use of the pattern analysis wheel, time event matrices, association matrices and the associated impact on predictive analysis. Additionally, our lieutenants receive training on the new analytical software the Counter Intelligence/Human Intelligence community currently uses called AXISPRO.

With respect to lethal skill development, we introduced offensive and defensive "patrol lanes" to increase our officers' overall exposure and application to the fire support planning process by an increase of 20 hours. This developmental training deliberately allows increased time for them to receive an operations order, formulate a fire support plan and brief/rehearse the plan. As a result of this adjustment, students now spend twice as much time in the field than they did a year ago.

The Gunnery Department made significant improvements in the course instruction given to lieutenants. New updates in dealing with Modular Artillery Charge System (MACS), Excalibur, Digital Fire Control System (DFCS), and Advanced Field Artillery Tactical Data System (AFATDS) already have been implemented or are in the process of being implemented in FY09. All manual gunnery lesson plans, exams and practical exercises currently are being revised with M777 howitzers, MACS charges and AM-3 Tabular Firing Tables.

Additionally, the Gunnery Department implemented instruction in dealing with the M982 Excalibur projectile. Instruction focuses on teaching lieutenants weapon characteristics and AFATDS mission processing during the automated special situations class. The Gunnery Department has revised portions of its AFATDS instruction, to include DFCS, in preparation for M777A2s and M119A3s. DFCS instruction will continue to improve with course updates and software revisions.

Ultimately, automated instruction will revolve completely around DFCS for M777s and M119A3s. AFATDS 6.5 is being fielded in Burleson Hall and will be implemented mid-FY09. As the Army pushes forward with digital firing capability with our primary weapons systems, automated systems to compute firing data (e.g. AFATDS, Centaurs and Tadpoles), and continues to field precision guided munitions and precision guided kits, we began the process of assessing manual gunnery training (how much we train and how we train it).

This future BOLC III redesign will include more time allotted to automated gunnery and less to manual gunnery. Additionally, we are working on our teaching of gunnery and ballistics theory searching for potential simulations or gaming to augment this training. The expectation of our maneuver commanders in the current hybrid fight is that we, as the Field Artillery, are capable of precision and accuracy, with added mobility and responsiveness. As such, training at Fort Sill will reflect this.

FACCC Students CPT Alex Tesar, CPT Randy Overstreet and Capt Richard Stinnet (USMC) stand by for Section Chief verification to fire, March 2009.

Warrant Officer Education System (WOES). Similarly, with needed changes in the captain and lieutenant courses, emerging changes to the Warrant Officer Advance Course (WOAC) curriculum are based on professional discussions with WOAC classes to outline gaps within the WOES. The outlined gaps within the MOS 131A Field Artillery Targeting Technician's WOES can be summarized as "Warrant officers at the brigade and division level[s] are facing many challenges due to the contemporary operating environment (COE). These challenges emerge from their lack of self-development (doctrine revisions are detrimentally slow and deployment-cycles do not facilitate attending professional development). Home-station training is not based on the realities of theater operations; this leads them to not knowing the enemy (ever-evolving threats in Iraq and Afghanistan) and not understanding the terrain (cultural awareness and understanding)."[4]

These changes to WOES are also a direct result based on the facts that, out of the 12 students that composed WOAC 04-08 and 01-09, six out of 12 never trained at a CTC, and seven out of 12 never conducted the MDMP after graduating from Warrant Officer Basic Course (WOBC). Furthermore, seven out of 12 students never have been assigned as a maneuver brigade targeting officer. Proactive mentoring by our senior 131As consistently has been outlined by the students as one of the solutions that must be implemented; however, personal accountability must be at the forefront of any and all solutions.

These observations have led to several initiatives directed at updating lesson plans. A trip to Iraq to discuss evolving threats as they pertain to fire support doctrine and initiatives which impact the practical application of lethal and nonlethal fires; attendance of the Military Intelligence CCC "Targeting Process" periods of instruction to gather TTPs to synchronize the Intel Collection Cycle process with the Fires War Fighting Function—are two such initiatives.

WOBC. The eight-month and 11-day WOBC curriculum is weighted on the fundamentals of the three, primary warfighting functions (WFFs) that comprise a brigade combat team (BCT) staff; Maneuver, Intelligence and Fires with subcomponents consisting of current operations and planning cells. During the first 17 weeks, WOBC focuses on all the systems the 131A is working with or around, to include Command Post of the

Future, Joint Automated Deep Operations Coordination System (JADOCS) and AFATDS.

A key component of the WOBC curriculum is the Collateral Damage Estimate Course. We introduce the students to MDMP and walk them through each part as it pertains to each primary WFF with small injections by the ancillary functions such as psychological operations, civil-military operations, civil affairs and tactical information operations. We train in as much detail as possible, placing the students in situations that will force them to apply problem-solving using the methodical steps of MDMP in each respective WFF.

We then start the foundational portion of the Army Targeting Process focusing on Decide, Detect, Deliver and Assess (D^3A), emphasizing the application of assets both lethal and nonlethal against threats and problem sets. We also have the students develop and conduct a Find, Fix, Finish, Exploit, Analyze and Disseminate (F^3EAD) targeting methodology to D^3A comparison brief, giving them an understanding of how both processes are complementary in purpose, but differ in focus.

We finalize the curriculum with our capstone exercise, where students are assigned leadership roles that parallel the three WFFs and assigned into current operations and planning cells, placing them in a simulation pushing the functions to unify and solve problems as a single unit. Halfway through the exercise we reverse their roles and continue the same processes with different missions and focuses.

There are 24-hour MDMP periods injected with each half of the class, at which time the students are required to brief the WOBC instructor, the WOAC instructor or a guest in the rank of lieutenant colonel or higher. Finally, the students' last requirement in the Targeting Phase is a seminar on contemporary topics dealing with today's Army and its future.

WOAC. The nine-week and three-day WOAC curriculum is weighted on the three primary WFFs that comprise a division staff: Maneuver, Intelligence and Fires. The difference is the tier-level of emphasis is at the operational and strategic levels rather than the tactical level. The WOAC expands the focus to prepare 131As with advanced concepts of Army and joint doctrine for the three primary WFF to familiarize students with the duties expectations a senior staff officer at division, corps and echelons above corps levels.

The WOAC curriculum is comprised of a three-pronged approach. An overt emphasis on reinforcing doctrine of the primary WFF, coupled with a Middle Eastern cultural awareness seminar; an in-depth overview of systems (hardware and software) that provides a common operational picture, and a series of video-teleconferences (VTCs) with senior FA warrant officers assigned to BCT, division and corps staffs who are deployed (to either Iraq or Afghanistan). We also use NTC and JRTC to give an emphasis at cross-pollination of current counterinsurgency TTPs as well as FA warrant officer training and education issues.

The VTCs with 131As serving at both the division and brigade levels, as well as the CTCs, add valuable training and mentoring for the WOAC students beyond the institutional approach because they provide a forum for feedback and TTP sharing.

Officer PME at Fort Sill remains committed to being relevant and ready in educating and training our officers in support of the maneuver force commanders in the current and future fights. Our end state remains a Field Artilleryman, MOS qualified, ready to make an immediate impact on his next unit of assignment.

Endnotes:

1. CSM (R) Jeffrey L. Moyer, "MTTs—Resetting FA Core Competencies," *Fires* Bulletin, July-September 2008, available online at **http://sill-www.army.mil/firesbulletin/**.
2. MG Peter M. Vangjel, Draft Operations Order 002-08: Field Artillery Campaign – US Army Fires Center of Excellence and Fort Sill, 01 September 2008, available online at **https://www.us.army.mil/suite/doc/13697166**.
3. MAJ Peter M. Sittenauer and MAJ Cornelius L. Morgan, "FACCC: Redesigned for Today and Tomorrow," *Fires* Bulletin, July-September 2008, available online at **http://sill-www.army.mil/firesbulletin/**.
4. CW4 Jimmy A. Gomez "FA Targeting Technician, Quarterly Newsletter, 2nd Quarter FY09: WOAC Update" available online at: **https://www.us.army.mil/suite/portal/index.jsp.**

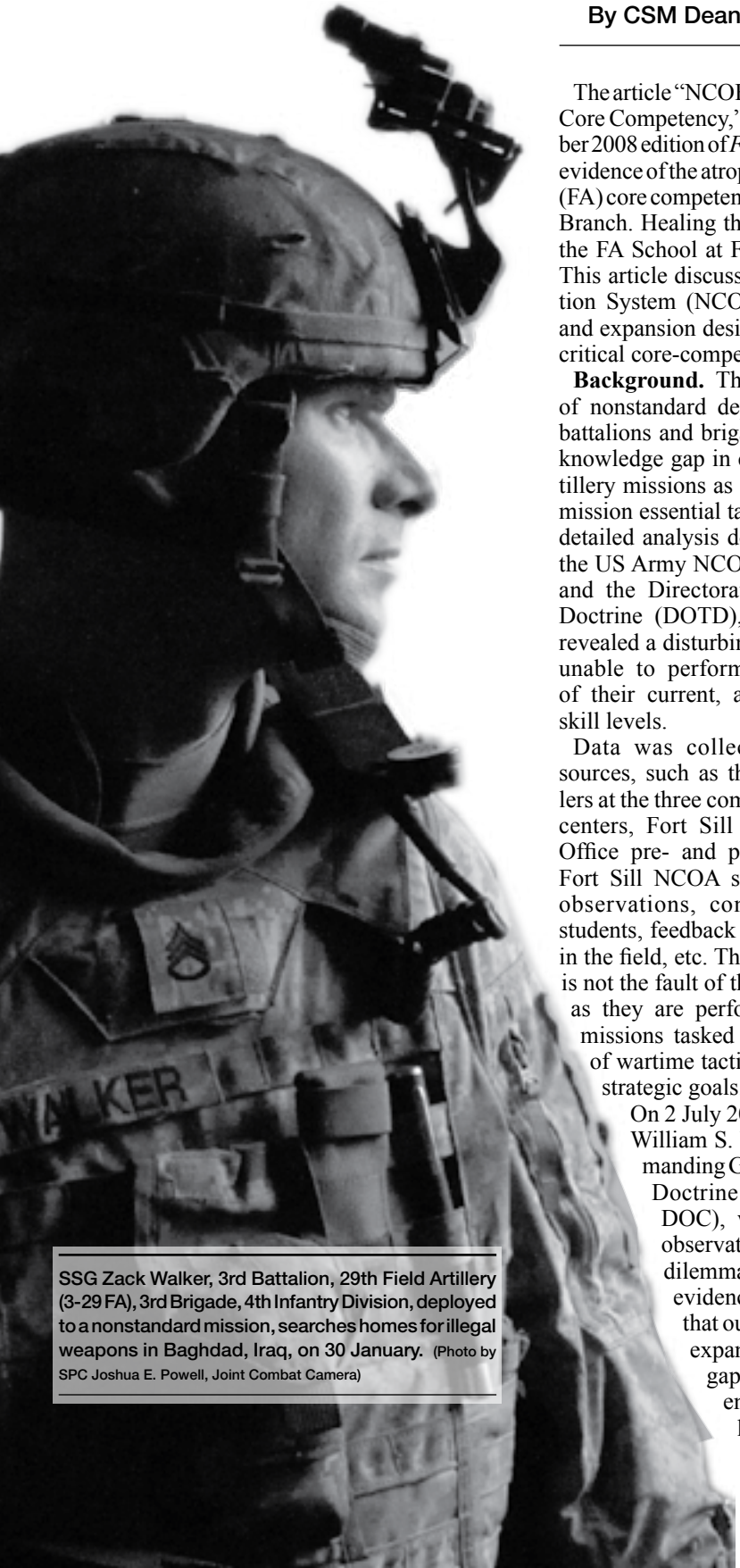
Chief Warrant Officer Two Shannon Mowery, a student at the Warrant Officer Advanced Course at Fort Sill, Oklahoma, learns to use the Command Post of the Future (CPOF). CPOF empowers Warfighters to visualize the battlespace and synchronize the elements of combat power while simultaneously collaborating and sharing data in near-real time, April 2009. (Photo by Jason Scott Kelly)

Lieutenant Colonel Christopher P. Talcott, Field Artillery (FA), is the Battalion Commander for 1st Battalion, 30th FA (1-30 FA), Fires Center of Excellence (CoE), Fort Sill, Oklahoma, which has the responsibility for FA officer and warrant officer basic and advanced courses training and education. Previously, he served as a Professor of Military Science at the University of California – Los Angeles; the Battalion Executive Officer for 1-82 FA, deployed in support of Operation Iraqi Freedom (OIF) II; and the Brigade Fire Support Officer, 5th Brigade, 1st Cavalry Division, deployed in support of OIF II. He was an Assistant Professor at the US Military Academy, West Point, New York; and the Battery Commander for C Battery, 4-42 FA, Fort Hood, Texas. He holds a master's degree in Engineering Psychology from Wright State University, Dayton, Ohio.

Major Cornelius L. Morgan, FA, is the Senior Instructor and Battery Commander at the FA Captain's Career Course at Fires CoE. He served as an Observer/Controller at the National Training Center, Fort Irwin, California. Previously, he was the Battalion Fire Direction Officer (FDO) and Assistant Battalion S3 for 4-27 FA in Baumholder, Germany, with duties as a Task Force FSO for 2-6 Infantry. He was the Service Battery Commander for 4-27 FA, deploying in support of OIF, conducting combat operations in Baghdad and An Bar Province. He also served as a Battery FDO, Armor Company Fire Support Officer and Battalion Targeting Officer in 2-82 FA, 1st Cavalry Division, Fort Hood, Texas. He holds an MA of Management and Leadership from Webster University at St. Louis, Missouri.

Chief Warrant Officer Three Scott W. McKnight, FA, is the Primary Phase One Targeting Instructor for the Warrant Officer Basic Course at the Warrant Officer Instruction Branch, Fires CoE. He served as the Senior Brigade Targeting Observer/Controller at the Joint Readiness Training Center, Fort Polk, Louisiana. Previously, he served as the Brigade Targeting Officer for 2nd Brigade, 10th Mountain Division (Light), in Fort Drum, New York, deploying in support of OIF. He also served as a Q-36 Radar Section Leader for 2-15 FA, deploying in support of both Operation Enduring Freedom I and OIF II.

On Time, On Target:
FA NCOES Transformation and Expansion



SSG Zack Walker, 3rd Battalion, 29th Field Artillery (3-29 FA), 3rd Brigade, 4th Infantry Division, deployed to a nonstandard mission, searches homes for illegal weapons in Baghdad, Iraq, on 30 January. (Photo by SPC Joshua E. Powell, Joint Combat Camera)

By CSM Dean J. Keveles, FA

The article "NCOES—Restoring NCO Core Competency," in the July-September 2008 edition of *Fires* Bulletin, laid out evidence of the atrophy of Field Artillery (FA) core competencies across the entire Branch. Healing the FA is a priority at the FA School at Fort Sill, Oklahoma. This article discusses the NCO Education System (NCOES) transformation and expansion designed to address this critical core-competency atrophy.

Background. The past seven years of nonstandard deployments for fires battalions and brigades created a large knowledge gap in conducting core Artillery missions as dictated by the core mission essential task list (CMETL). A detailed analysis done by the cadre of the US Army NCO Academy (NCOA) and the Directorate of Training and Doctrine (DOTD), both at Fort Sill, revealed a disturbing number of NCOs unable to perform the critical tasks of their current, and often previous, skill levels.

Data was collected from various sources, such as the observer/controllers at the three combined arms training centers, Fort Sill Quality Assurance Office pre- and post-course surveys, Fort Sill NCOA small-group leaders' observations, concerns of NCOES students, feedback from the leadership in the field, etc. This loss of core skills is not the fault of the operational units, as they are performing nonstandard missions tasked to them in support of wartime tactical, operational and strategic goals.

On 2 July 2008, General (GEN) William S. Wallace, then Commanding General, Training and Doctrine Command (TRADOC), was briefed on the observations of our Branch's dilemma and given enough evidence for him to agree that our NCOES needed to expand to close the skill gap that was ever-widening. With almost no hesitation, he agreed that expanding was the right thing to do for our NCO Corps.

Major General Peter M. Vangjel, Commanding General, Fires Center of Excellence (CoE) and Fort Sill, provided his guidance in the recently published draft Field Artillery Campaign Plan (FACP)—in which Phase II has a main effort geared toward the restoration of core competencies. The draft FACP can be downloaded from the Army Knowledge Online (AKO) Fires Knowledge Network (FKN) Website homepage at **https://www.us.army.mil/suite/doc/12513785**.

This guidance gives the Fort Sill NCOA and DOTD the primary direction to use as much training time as possible on military occupational skill (MOS) critical tasks in the NCOES to restore FA core competencies in our NCOs. TRADOC emphasized the need to develop a plan and identify those critical tasks for training in the institutional courses while not exceeding eight weeks for any one NCOES course.

Course Transformation. Our NCOES is undergoing the greatest transformation ever. By direction of Headquarters, TRADOC, all NCOAs will transform the Basic NCO Course into the Advanced Leader Course (ALC) and the Advanced NCO Course (ANCOC) into the Senior Leader Course (SLC) no later than 1 October 2009. This transformation is more than a name change. It has a greater focus of "teaching a level up."

Tasks. In other words, some tasks will either "migrate down" or be included and discussed within lessons of a lower-level course. ALC will focus on squad, crew and team tasks, but include sergeant first class-level tasks. SLC will focus on platoon-level tasks, but also will address battery-level tasks. The FA NCOES will integrate 35 hours of First Sergeant Course tasks into SLC.

The particular tasks selected for inclusion were derived by feedback from FA command sergeants major (CSMs) across the field. In October 2008, CSM Joseph D. Smith, CSM of the FA, provided the list of First Sergeant Course tasks recommended for inclusion (87 hours worth) from the 2008 US Army Sergeant Major Academy Commandants' Conference Working Group. He posed a question to the field, "What tasks from this list would

you want an NCO graduating from SLC, currently known as ANCOC, to be trained on should you want that graduate to be a first sergeant immediately, knowing there may not be a First Sergeant Course for them to attend in the future." Almost all CSMs responded with the same tasks requested for inclusion.

Technology. Next was the need to leverage as much technology as possible. The NCOA continuously looks for simulations that provide valuable training opportunities for our courses that reduce risks of injury and reduce costs in a time of belt-tightening. One such technology that will be incorporated into both ALC and SLC is the Virtual Experience Immersive Learning Simulation (VEILS), which is currently in use with some of the Officer Education System (OES) courses.

VEILS is an interactive program that gives an NCO the opportunity to improve real-world performance by exploring hypothetical situations and the process of making decisions. In this program, a student becomes the lead character in an interactive movie, makes leadership decisions in both garrison and combat scenarios and sees the consequences of the choices he selects. This training product exercises and improves the decision-making skills of our NCOs through a balance of known experiences with exposure to new situations and scenarios, mixed with discussions of selected solutions among peers in the classroom. This product helps create more adaptive leaders able to perform their leadership, technical and tactical duties with greater confidence.

Between five and 10 hours of VEILS will be added to the FA ALC and SLC. The NCOA also will continue to use simulations already available at Fort Sill, such as the Joint Fires and Effects Trainer System (JFETS), Joint Conflict and Tactical Simulation (JCATS) and the Call for Fire Trainer, and explore new and emerging technologies that enhance instruction, such as 3-D Model Simulation Programs.

Standards. Because a majority of core competencies are at an all-time low due to the many nonstandard deployments, NCOES instructors are spending valuable training time trying to validate 10- and 20-level tasks with students. To ensure students attending NCOES courses retain what they learn, the FACP directs that instructional testing be geared toward mastery of skills, rather than familiarization and proficiency. This will be accomplished by the requirement to obtain a passing score of 90 percent on all exams. This falls back to the need for NCO self-development. To be successful, NCOs attending NCOES courses will need to prepare themselves better, conduct more research during personal time and form study groups in the evenings and weekends.

Existing Course Title	Course Length	Transformation Course Title	Course Length
Field Artillery (FA) Cannon Section Chief Basic NCO Course (BNCOC)	3 Weeks, 3 Days	13B Advanced Leader Course (ALC)	5 Weeks
FA Platoon Sergeant Advanced NCO Course (ANCOC)	4 Weeks, 1 Day	13B Senior Leader Course (SLC)	7 Weeks
FA Tactical Data Systems Specialist BNCOC	6 Weeks, 1 Day	13D ALC	6 Weeks, 2 Days
FA Tactical Data Systems Specialist ANCOC	3 Weeks, 2 Days	13D SLC	4 Weeks, 4 Days
Fire Support Sergeant BNCOC	3 Weeks, 3 Days	13F ALC	5 Weeks, 4 Days
Fire Support Sergeant ANCOC	4 Weeks, 2 Days	13F SLC	8 Weeks
Multiple Launch Rocket System (MLRS) Section Chief BNCOC	3 Weeks	13M ALC	4 Weeks
MLRS Platoon Sergeant ANCOC	1 Week, 3 Days	13M SLC	4 Weeks, 4 Days
MLRS Operations/Fire Direction Section Chief BNCOC	2 Weeks, 4 Days	13P ALC	3 Weeks
MLRS Operations/Fire Direction Senior Sergeant ANCOC	2 Weeks	13P SLC	4 Weeks, 4 Days
FA Radar Section Chief BNCOC	4 Weeks, 1 Day	13R ALC	7 Weeks
FA Senior Radar/Targeting Sergeant ANCOC	5 Weeks, 4 Days	13R SLC	8 Weeks
FA Surveyor Section Chief BNCOC	3 Weeks, 4 Days	13S ALC	4 Weeks
FA Survey Senior Sergeant ANCOC	2 Weeks	13S SLC	3 Weeks, 4 Days
FA Meteorological Section Sergeant BNCOC	2 Weeks, 2 Days	13W ALC	3 Weeks
FA Meteorological Section Leader ANCOC	1 Week, 3 Days	13W SLC	3 Weeks, 3 Days
FA Cannon Section Chief BNCOC Mobile Training Team (MTT)	2 Weeks, 3 Days	13B ALC (MTT)	2 Weeks, 3 Days
Fire Support Sergeant BNCOC (MTT)	2 Weeks, 3 Days	13F SLC (MTT)	3 Weeks, 4 Days

NCO Education System Transformation

Under the new administration, and a recently signed Status of Forces Agreement with the Iraqi government, we will begin to draw down from Iraq. Many units will have more dwell time at home station to train on their CMETL, even with a build-up of forces in Afghanistan. As students begin to show greater proficiency in skills that support the critical tasks we teach in NCOES, the NCOA and DOTD can begin to create more challenging exams to meet the FACP's intent of mastery. At that point, we will explore the possibility of going to closed book exams for better retention while maintaining the 90 percent passing standard for exams in lethal and nonlethal fires critical skills.

Course Expansion. By the additions to the courses as part of the transformation, all courses for all MOS in NCOES will expand (see the figure). Some will grow by one day and others by as long as four weeks. Our efforts will meet the FACP's "Reset" and "Sustain Soldiers, Leaders and Families" lines of effort, by adding more critical tasks to each course and spend more time on critical tasks already a part of each course curriculum.

Due to the nature, operational requirements, and operations tempo (OPTEMPO) of the current fight, the FA cannot depend on all three pillars of training (self development, institutional training and operational assignments) to develop our Soldiers and leaders. Institutional training must be the center-point of core-competency maintenance and sustainment. NCOs will regain individual knowledge and confidence in their specific MOS skill sets that allow them to return to the operational force and retrain individual,

section, team and organizational technical and tactical competence.

One of the challenges to expanding the course was to ensure all FA NCOs within the Reserve Component (RC) could complete the new requirements successfully within their limited drill times. It has been noted that although RC FA NCOs have been performing nonstandard missions also, their problem set is slightly different. RC core-skill atrophy has been noted as less severe because Army National Guard (ARNG) Artillery battalions tend to spend more time together as crews and teams than do the active Army Soldiers, who change duty stations more often.

The norm seems to be that ARNG Artillery crews and teams seem to know each other better over longer periods of time and return to or maintain their crew and battle-drill proficiency better. When observing ARNG Artillery NCO students attending the active Army FA NCOES courses, these NCOs are professional to the point that the cadre cannot tell whether students are active or RC other than by their student packets.

Instructional Methodology Change. Outcome-Based Training and Education (OBTE) is a methodology that focuses the student on the desired end state (outcome) of the training objective at the beginning of the lesson. Soldiers understand the parameters and constraints, their own weaknesses and strengths as pertaining to the particular training session, and learn the "why" and the "how" of the task. They use or develop their critical thinking skills to arrive at the desired outcome in performing the task. In a context that many leaders can relate to from the way we have trained for decades past—it is understanding the terminal learning objective as the outcome and knowing those enabling learning objectives that lead to the desired outcome.

Understanding how something works or why a certain step is performed leads to Soldiers' being able to reach the desired outcome better than just training by repetition within the task, condition and standards. Having Soldiers demonstrate the outcome and understand how they arrived at that end is what counts. By using an adaptive leader methodology, the institutional courses can build critical-thinkers who are more adaptive to varying conditions and can build greater mastery of skills.

The Asymmetric Warfare Group, Fort Meade, Maryland, developed a Combat Application Training Course to help instructors understand the OBTE method. The Quality Assurance Office at Fort Sill is developing a training support package (TSP) that will become an integral part of the Army Basic Instructor Course to ensure all new instructors are familiar with OBTE and apply it to the courses they instruct. The Fort Sill NCOA plans to incorporate this TSP into the NCOES courses to help students understand the methodology. Understanding the OBTE will help them do better in the courses they are attending, and, more importantly, will help them understand their own instructional styles better when training their Soldiers in the operational units. Eventually, the goal will be to indoctrinate the entire force with this instructional methodology, so a new generation of NCOs and trainers will be teaching by means of OBTE and adaptive leader methodology.

Self-Development. This transformation and expansion of our FA NCOES courses are "on time and on target." However, to regain and maintain proficiency in their core skills, or to build new skills, it is imperative that NCOs take responsibility for their own self-development. This can be accomplished only by self-study, training of themselves and the Soldiers in their charge, and conducting research to stay current. There are vast amounts of training tools, information and data available to all NCOs on the FKN maintained by the FA School at **https://www.us.army.mil/suite/grouppage/93053**.

Those students who reviewed the TSPs available on the Fires CoE Reach Back Training Website **(https://firescoe.sill.army.mil/index_FA.htm)** were prepared and did better in their courses at the Fort Sill NCOA than those students who did not prepare. These NCOs further refined their skills during attendance in NCOES. Many of these TSPs are covered in the institutional courses at Fort Sill. Students can use these lessons to prepare for the Fort Sill NCOA or functional courses, to train Soldiers/crews/teams at home station, and also to prepare units for training in support of their CMETL.

The Fort Sill School also offers Reset mobile training teams that can provide support to commanders who request them in support of unit training objectives and Reset of skills at various levels. Information about requesting such training is available on FKN at **https://www.us.army.mil/suite/page/584601**.

Another medium of self-development is the newly implemented Structured Self-Development Program (SSDP) as a Web-based medium of lessons using Blackboard. For many NCOs who have taken online college classes, this will be a similar method of instruction. SSDP will become a mandatory phase of the institutional courses for successful graduation at each level of NCOES.

A note of interest to many readers is the integration of the Air Defense Artillery (ADA) NCOES courses into the Fort Sill NCOA. The Fort Sill NCOA will be renamed the Fires CoE NCOA with both FA and ADA NCOs attending their NCOES courses at one academy. This integration is a part of the Base Realignment and Closure commission's decision to move the ADA School from Fort Bliss, Texas, to Fort Sill, Oklahoma.

This integration is not a merging of the Branches, but the creation of the Fires CoE. Both the FA and the ADA Branches will explore possible efforts of synergy between one another. As a part of this integration and effort of synergy, the ADA DOTD agreed that the same First Sergeant Course material would be added to their SLC curriculum as well.

This is the greatest change to NCOES that has ever been documented. The institutional pillar of leadership will change to meet the intent of the TRADOC-directed transformation to ALC and SLC in teaching a "level up." It will meet the FA Chief's intent in the FACP to regain core competencies and move toward mastery of critical skills, while simultaneously implementing a new instructional methodology through OBTE, and it will express the obligation of self-development for all NCOs. In this "Year of the NCO," NCOs must take education and life-long learning very seriously for the success of our Branch and our Army. Transformation and expansion of the NCOES courses is at a time of critical need for our Branch so our NCOs will remain the Backbone of the Army.

Command Sergeant Major (CSM) Dean J. Keveles, Field Artillery (FA), is the Commandant of the US Army NCO Academy, Fires Center of Excellence, at Fort Sill, Oklahoma. He served as the Battalion CSM of 1st Battalion, 22nd Field Artillery (1-22 FA), 434th FA Brigade, Fort Sill; CSM of the 3-29 FA, 3rd Brigade Combat Team, 4th Infantry Division, Fort Carson, Colorado; and also as Task Force Pacesetter CSM, deploying in support of Operation Iraqi Freedom 05-07. He also has served as the School Chief/ First Sergeant (1SG) of the Advanced NCO Course, US Army NCO Academy; 1SG of Headquarters and Headquarters Battery, 212th FA Brigade; and 1SG of A Battery, 6-32 FA, all at Fort Sill.

The Field Artillery Museum is preparing for its "grand opening" in June, in concert with the Fires Support Seminar. (Photo by COL Frank J. Siltman, Fires Center of Excellence, Fort Sill, Oklahoma)

US Army Field Artillery Museum Makes History

By COL Frank J. Siltman, FA

The Fort Sill museum system is at the threshold of tremendous change. For most of the history of the Field Artillery (FA) Branch's association with Fort Sill, Oklahoma, there has not been a "stand-alone" Field Artillery museum dedicated to the Army's longest continuously serving branch. For years, the Fort Sill Museum has been a function of the Fort Sill National Historic Landmark, depicting the history of the frontier Army, Southwest Oklahoma and the FA Branch. That is changing as the US Army Field Artillery Museum is preparing for its "grand opening" in June, in concert with the Fires Support Seminar. The museum is located just west of the Old Post Corral along Randolph Road.

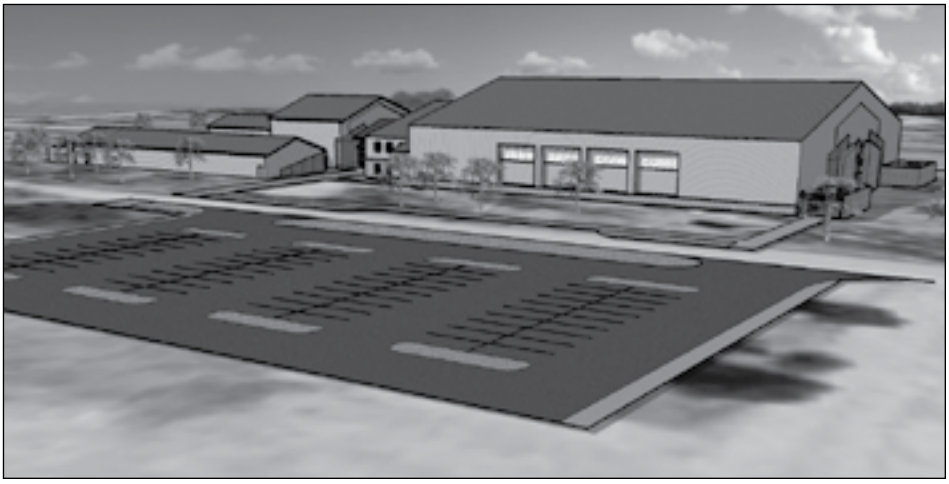
The Museum. Fort Sill will have two separate museums with the National Historic Landmark and the US Army Field Artillery Museum. Then in 2011, as part of the Base Realignment and Closure (BRAC) process, the Air Defense Artillery Museum will open, giving Fort Sill a third museum.

In June 2008, the new building for the FA Museum was completed as part of BRAC construction and was turned over to the Fort Sill Museum. The interior exhibit planning was completed and coordinated with the Center of Military History and the Training and Doctrine Command (TRADOC) Chief of Museums. In the fall of 2008, interior construction of exhibits began, pieces were moved, and refurbishing began on those pieces.

In December 2008, Gordon Blaker arrived as the first Curator/Director of the FA Museum. He began to review plans and develop a concept to meet the target date of the grand opening in June. This was a complex process, but Blaker designed a holistic approach.

The FA Museum will depict the history of the US Army FA from its inception under Henry Knox in December 1775, through today. The FA Museum currently is developing exhibits, endeavoring to employ interactive and multimedia techniques to tell the story of the FA in US military history. Although there will be some static-piece displays, even those will include figures and displays that place the pieces in the context of history, the evolution of warfare and, most importantly, the Soldiers that served them.

Outside Partnerships. This is a work in progress as the museum prepares for the grand opening, but even that will not be the final product. The FA Museum will be a "living entity" that will change and



An artist's rendition of the Field Artillery and Air Defense Artillery Museum complex slated for completion in 2011. (Courtesy of Burns and McDonnell)

improve, leveraging technology to present the story and complement the exhibits. This will be an on-going effort, requiring partnership with FA units, the FA Association and the Friends of Fort Sill.

The relationship with outside organizations is critical to the way ahead. The Friends of Fort Sill is a volunteer, private organization that has been formed to support Fort Sill's museums. This group is comprised of members of the community, businesses, retirees and Army spouses. The Friends of Fort Sill works with the community and industry to gain support for the museums financially, materially and with volunteers. This partnership is a critical, cooperative effort to advance the museums and history; to educate people about Fort Sill, the FA, and the Army heritage; and to outreach to the community.

The FA Museum will depict the history of the US Army FA from its inception under Henry Knox in December 1775, through today.

Other Initiatives. Another venue to obtain support is by reviving an older program. FA units are being engaged to identify weapons systems tied to unit heritage and then associate the units with the display of those pieces with some level of sponsorship. This will include exhibits in the museum, in the new Artillery Park, as well as helping units with the maintenance of pieces displayed in unit areas not belonging to the museum. These efforts, tied to a volunteer program, are essential to helping the museum achieve the short-term goals—especially refurbishing and developing displays, but also in sustaining the museum in the long term.

Old Cannon Walk. The Old Cannon Walk near the Old Post Quadrangle currently is being reviewed, and pieces are being identified for refurbishment. Many pieces already have been moved for inclusion in the new museum exhibits, but there are plans for the new Artillery Park just north of the new museum. This will result in Artillery pieces being removed from static displays and placed in the new Artillery Park.

While some will be on static display, many will be placed in contextual exhibits. For example, a Vietnam-era piece will be placed in a reproduction of a firebase. This is an extension of efforts by the museum to put the history of the FA in context in the presentation to educate the public and FA students on the Branch's heritage.

National Historic Landmark. All of these changes are not just for the FA museum, but also for the National Historic Landmark as well. By bringing in an FA Museum curator to focus on branch-specific history, the National Historic Landmark Curator, Towana Spivey, can focus on the Fort Sill's history and its rich role in US Army and American history.

Although not common knowledge, Fort Sill is the most complete and well-preserved frontier Army post in the US. While there are many historic frontier forts, most have reconstructions or missing buildings. By virtue of Fort Sill being a constantly operational post, it has been preserved, offering a unique view into our nation's history and the frontier Army. The National Historic Landmark will continue to evolve with new exhibits on the history of the Southwest and the restoration of buildings.

ADA Museum. The third aspect of the new museum program is the Air Defense Artillery Museum's move to Fort Sill. The ADA facility is scheduled to break ground in 2010, with the building scheduled for completion by the fall of 2011. The ADA staff is working with Fort Sill on all of the planning, the moving of artifacts, and the design of the museum and exhibits. The ADA Museum will have its own director/curator.

These three museums will make Fort Sill unique in the Army. The museum complex and campus will bring together the history of Fort Sill, the frontier Army, Southwest Oklahoma and the two proud branches of FA and ADA. This will create a museum campus unequalled in the Army and a significant center of Army heritage.

To oversee this program, the Commanding General, Fires Center of Excellence, is planning to establish a directorate of museums and military history to coordinate and synchronize efforts. This directorate also will work with TRADOC, the Center of Military History and outside organizations to advance the purposes of education, outreach, historic preservation and telling the Army's story. Hopefully, this will be seen as a "best practice" by TRADOC and the Army, and posture Fort Sill for the future to maximize the potential that these unique facilities provide to the Army and the nation.

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The Threat, 1964

By Dr. Boyd L. Dastrup

Insurgency is not a "new" type of warfare to the US Military. Some of the techniques and theories used by insurgents today in the War on Terrorism are similar to those employed by the Vietcong to fight and defeat the greater numbered and better armed and trained American forces in Vietnam.

A US Soldier acts as a Tactical Advisor to the South Vietnam conventional forces. (Photo courtesy of the US Army Center of Military History)

In September 1950, President Harry S. Truman dispatched the US Military Assistance Advisory Group (MAAG) to Saigon, South Vietnam, to supervise the French use of $10 million worth of American military weapons and equipment in their fight against the Viet Minh insurgents. This initial, small effort grew from providing a limited number of military advisers to build and train a South Vietnamese army in the 1950s to the commitment of American combat troops in the 1960s.

Following the French withdrawal from Vietnam in 1956, the Americans picked up all major military responsibilities in South Vietnam. Initially, MAAG advisers found the Army of the Republic of Vietnam (ARVN) in a sorry state and set out to whip it into shape. Encountering a language and cultural barrier which complicated training, advisory teams assisted the Vietnamese commander and his staff. While the officers furnished guidance on all matters concerning unit effectiveness, the NCOs concentrated on planning, organizing, supervising and training the units.

Apprehensive of a North Vietnamese invasion along the lines of the North Korean invasion of South Korea in 1950, the teams trained ARVN to fight on a conventional battlefield with large armored, mechanized and field artillery formations. This would give it the ability to defeat an invasion by the People's Army of Vietnam (PAVN), also called the North Vietnamese Army (NVA), but poorly prepared ARVN for the pervasive guerrilla war in South Vietnam in the 1950s and early 1960s.[1]

The Enemy. As the US was developing a conventional South Vietnamese army, the Communists intensified their effort to unify Vietnam under their control through a well-coordinated insurgency. Formed on 20 December 1960, as a political front for the liberation of South Vietnam, the National Liberation Front (NLF), composed of Viet Minh, Communists, nationalists, socialists and others interested in overthrowing Ngo Dinh Diem's South Vietnamese government, and the People's Liberation Armed Front (PLAF), organized on 15 February 1961, to direct the military effort and commonly called Vietcong by the Americans, represented the southern wing of the Vietnamese revolutionary nationalist movement, while the northern wing resided in Hanoi, North Vietnam.

The Vietcong consisted of main or regular forces that were well-trained, professional, disciplined, and thoroughly politically indoctrinated and were stationed in secret bases and secure areas; regional forces of guerrillas who operated at the district level; and local irregular forces who were farmers by day, indistinguishable from other villagers and farmers, and terrorists by night. Regardless of their organization, Vietcong military forces complemented the NVA which was a well-trained, highly motivated and battle experienced combat force.

The Method. The NVA and Vietcong, both of which were primarily light infantry, generally depended upon mortars and rockets for fire support until 1966 when they started employing Soviet and captured American field artillery. The local Vietcong terrorists set the booby traps, conducted night raids, served as recruiters for the cause, kidnapped and murdered South Vietnamese pacification workers and exploded bombs in Saigon to demonstrate the inability of the South Vietnamese government to provide basic security.[2]

Dedicated to the cause of overthrowing colonialism in all its forms in Vietnam and driving the Americans out, the Vietcong with support from Hanoi devised a strategy of armed violence and political action early in the 1960s to overthrow the South Vietnamese government which they viewed to be illegitimate. While NLF political leaders employed propaganda to win support from the people and simultaneously turn world and especially American public opinion against the American intervention, Vietcong military forces assassinated South Vietnamese government officials, intimidated the peasants through violence and overran ARVN outposts or ambushed small units, capturing ARVN weapons in the process.[3]

Initiative. By 1963, the Vietcong had taken the initiative—even with the influx of American military personnel complete with their sophisticated weapons and helicopters that gave ARVN and the Americans the ability to strike quickly at any time and furnished them with the apparent advantage. Vietcong military forces quickly neutralized the helicopters. Sometimes, they stood and fought and employed small arms fire to knock helicopters out of the sky. On other occasions, they waited for the helicopters to land and then ambushed the landing force.

US Soldiers train combat skills to the South Vietnamese conventional forces. (Photo courtesy of the US Army Center of Military History)

The Battle of Ap Bac in January 1963, demonstrated the tenacity of the Vietcong military forces where they defeated a numerically superior ARVN force, disabled five American helicopters and suffered only light casualties. This decisive victory emboldened the Vietcong and Hanoi to intensify their insurgency in the South.[4]

The assassination of Diem in November 1963, provided the Vietcong and Hanoi with the opportune time to step up the insurgency. During the confusion that followed the assassination, political cadres infiltrated the strategic hamlets (designed by Diem to separate the peasants from the Vietcong) to turn them against the South Vietnamese government, while military forces inflicted heavy losses on ARVN. Demonstrating boldness, Vietcong forces even attacked a US Special Forces camp, Hiep Hoa, about 50 miles from Saigon in November 1963. They captured four Americans and a large stock of weapons and established a check point along Route One where they brazenly collected tolls, seized cargoes and cannibalized vehicles.[5]

As it infiltrated NVA regulars along the Ho Chi Minh trail into South Vietnam to supply the Vietcong and assist the growing insurgency, Hanoi decided late in 1964 to move forward with a general offensive paralleled by popular uprisings in the cities to topple the South Vietnamese government.

Late in 1965, Hanoi prepared to launch a strike to divide South Vietnam into two parts along the Pleiku-An Khe-Quinhon axis using the Chu Pong massive as a base of operations with subsidiary offensives north and south of the main thrust. Before the offensive could get off the ground, the 1st Cavalry (Airmobile) attacked into the Ia Drang Valley at the base of the Chu Pong. This led to the Battle of Landing Zone X-Ray from 14 to 18 November 1965 where the 2nd Squadron, Fifth Cavalry (2-5 Cav), 2-7 Cav and 1-7 Cav fought three tenacious NVA regiments.[6]

Weapons and Tactics. The overwhelming American firepower from field artillery from nearby firebases convinced Vo Nyugen Giap, the NVA commander, of the futility of fighting the Americans on the open battlefield and caused the NVA and Vietcong to henceforth reemphasize security, silence and speed to avoid annihilation. Using detailed plans and repeated rehearsals, they rejected battles of attrition along the lines of Landing Zone X-Ray for ambushes and hit-and-run strikes. NVA and Vietcong forces speedily attacked their objective, quickly withdrew, and depended upon mortars and rockets for fire support.

Rockets and mortars fit well with rapid movements and hit-and-run tactics because they were light and could be emplaced and displaced rapidly. Generally, NVA or Vietcong forces fired just a few rounds, quickly picked up their weapons and moved to another site often before the Americans could locate them for counterfire. Moreover, the rockets which were the primary artillery weapon of the NVA and Vietcong had low trajectories that were difficult to detect with the AN/TPQ-4 radar, making them virtually invisible. To defeat the rocket and mortar threat, the Americans turned to aerial observers. They located rockets and mortars by following their exhaust trails to pinpoint firing positions.[7]

Sappers complemented NVA and Vietcong mortar, rocket and infantry forces. Depending upon secrecy and stealth, they served as the lead element in assaults on a fixed installation or a military field position, such as a firebase. Armed with explosive devises, they breached the outer defenses and neutralized tactical and strategic positions to prepare the way for the main attack. Often, they disguised their attacks with mortars fired by infantry and then took advantage of the diversion to assault the center of the firebase while the defenders deployed to their bunkers seeking safety.[8]

Equally as frustrating to the Americans and ARVN, Vietcong forces mingled freely with the civilian population for cover, blended in with the civilians and attacked enemy ground forces or the local populace at the times and places of their choosing. Because of the difficulties of distinguishing between the Vietcong and the civilian population, ARVN soldiers and American Soldiers and Marines were constantly under threat from an unseen enemy and lived with restrictive fire engagement rules to prevent shooting civilians.[9]

As this suggested, the American military encountered an adaptive enemy in Vietnam. To nullify American firepower, the NVA and Vietcong relied upon ambushes, hit-and-run strikes, terrorist attacks, generally avoided a pitched battle unless they were cornered, and freely used the civilian population for cover to discourage counterattacks. Such tactics frustrated the Americans who wanted to fight the enemy on the open battlefield where their superior firepower could make a difference in the outcome of the battle and discovered the enemy to be determined, relentless and dedicated.

Endnotes:

1. Captain Leslie A. Belknap, "The Unsung Heroes: Redleg Advisory Efforts in Vietnam, 1965-1969," *Field Artillery*, April 1991, 14-17; Major General David E. Ott, *Field Artillery*, 22-37, 239; Ronald H. Spector, *Advice and Support: The Early Years*, The U.S. Army in Vietnam (Washington, D.C.: Center of Military History, U.S. Army, 1983), 103-104.
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4. Moss, *Vietnam*, 128-31; George C. Herring, *America's Longest War: The United States and Vietnam*, 1950-1975 (New York: John Wiley and Sons, 1979), 87-88.
5. Herring, *America's Longest War*, 110.
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7. Ott, *Field Artillery*, 10-13; Nagl, "The Failure of Counterinsurgency Warfare," 220-34.
8. Ott, *Field Artillery*, 7-20.
9. Herring, *America's Longest War*, 88.

Dr. Boyd L. Dastrup is the Field Artillery Historian for the US Army Fires Center of Excellence and Fort Sill, Oklahoma. He has written *The US Army Command and General Staff College: A Centennial History; Crusade in Nuremberg: Military Occupation, 1945-1949; King of Battle: A Branch History of the US Army's Field Artillery; Modernizing the King of Battle: 1973-1991; The Field Artillery: History and Sourcebook; and Operation Desert Storm and Beyond: Modernizing the Field Artillery in the 1990s*. He also has written articles in *A Guide to the Sources of United States Military History, The Oxford Companion to American Military History, and Professional Military Education in the United States: A Historical Dictionary* and served as a subject matter expert for the History Channel on "Dangerous Missions: Forward Observation" (2001) and the Military History Channel in "Artillery Strikes" (2005) and "Weaponology: Artillery" (2006). He has a Ph.D. in US Military History from Kansas State University.

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MG Peter M. Vangjel
Chief of Field Artillery (FA)
Commanding General, FA School and Fort Sill

Recommendations:

Made to Stick: Why Some Ideas Survive and Others Die by Chip Heath and Dan Heath, New York, NY: Random House Publishing Group, 2007. $16.50

The Pentagon's New Map—War and Peace in the Twenty-First Century by Thomas P.M. Barnett, New York, NY: The Berkley Publishing Group, 2004, 448 pages, $26.95.

The Sling and the Stone: on War in the 21st Century, by Colonel Thomas X. Hammes, USMC, St. Paul, MN; Zenith Press, 2006. $17.79.

Making Twenty-First-Century Strategy—an Introduction to Modern National Security Processes and Problems by Denis M. Drew and Donald M. Snow, Maxwell Air Force Base, AL: Air University Press, 2006, 288 pages.

Review of *Made to Stick*

Coming up with ideas is a major part of how we "make mission." We work in an idea-based Army where the more people who know your ideas, the greater your influence. Blogging, for example, works heavily in this fashion. If a person has a lot of good ideas and shares them, the blogger tends to become more popular over time.

Urban legends always are bombarding us—they are warnings or misinformation—that are told (and retold) each generation. Why? What is it about certain ideas and stories that make Soldiers remember them?

Made to Stick, coauthored by Dan and Chip Heath, breaks down different messages and stories and analyzes what makes them compelling enough to remember. This analysis shows how you can get your messages to "stick"—so you can learn how others have done it and how you can do it too. The book focuses on six principals that help your messages stick.

Simplicity. The core of the idea is what matters. Think proverbs—a one-sentence statement so profound you could spend a lifetime understanding it—and avoid sound-bites.

Unexpectedness. Be unpredictable, but satisfying. Your surprise must be relevant to the message, not weird for weird's sake.

Concreteness. The more abstract the concept, the less likely people will remember it. Concrete ideas are easier to remember. Experiments in human memory show that people remember concrete, easily visualized nouns more easily than abstract ones. People remember things that they can visualize.

Credibility. Ask questions that let Soldiers test themselves. Disarm them with funny questions and striking statistics. For example, what is more likely to kill you—an explosion or a dog?

Emotion. Make Soldiers feel, and then they will care. What is the benefit? People do not buy nails to simply own them; they buy nails to hang pictures of their children.

Stories. How do we get people to act on our ideas? We tell compelling stories that convey our ideas and make them take root. Stories are an effective tool because our minds create a mental model of what is being told; our brains visualize the objects discussed, and the interactions play out as the story unfolds.

The book's authors consider President John F. Kennedy's goal to "put a man on the moon and return him safely by the end of the decade" a successful concept. The idea was simple, concrete and an emotional story. It also did not allow the clutter of knowledge to distract from President Kennedy's goal, which was accomplished in July 1969.

One of my favorite messages is the Commander's Intent, a part of the Army's planning process. It is a short statement that appears at the beginning of every order to tell the mission's basic goal. That concept is stated another way in the Heaths' book, "no plan survives contact with the enemy." For instance, advance, detailed directives cannot deal fully with the realities that Soldiers face in the field and thus become obsolete quickly.

The Heaths consider the Commander's Intent a key to a successful concept. "Commander's Intent manages to align the behavior of Soldiers at all levels without requiring play-by-play instructions from their leaders. When people know the desired destination, [they are] free to improvise as needed in arriving there."

Made to Stick is an informative, entertaining and appealing book about the essentials of communication. The book is a must read for anyone who needs to communicate ideas in either verbal or written form.

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