A Joint Professional Bulletin for US Field & Air Defense Artillerymen

Fires

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Anticipate—Integrate—Dominate!

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FIRES DEPARTMENTS

Front Cover: Soldiers from the 3rd Battalion, 321st Field Artillery Regiment, 18th Fires Brigade, work quickly to load and unload rounds for an M777 howitzer during a training exercise on Forward Operating Base Salerno, Afghanistan, 28 February. (Photo by SPC Micah Clare, Joint Combat Camera Center)

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ADA 24/7 Hotline & Email	FA 24/7 Hotline & Email
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DSN 978-5312 or (915) 568-5312	DSN 639-2204 or (580) 442-2204
ada_fires@bliss.army.mil	redleg@conus.army.mil

Fires MUD TO SPACE

The FA Campaign Plan

By MG Peter M. Vangjel, Chief of Field Artillery

In June, we held the Field Artillery (FA) Fires Seminar at Fort Sill, Oklahoma. The annual seminar brings together senior FA leaders, active and retired, from around the Army. The theme of this year's seminar was, "Artillery Strong: Opportunities and Challenges in an Era of Persistent Conflict." The seminar provided an opportunity to take advantage of a great deal of collective experience and identify future challenges and opportunities facing the Branch. As always, the focus was on how to provide the best fire support to our customers, the maneuver commanders.

During this year's seminar, I took the opportunity to highlight my assessment of where we are, the challenges we are facing, and a roadmap of where we will go (Figure 1, Page 2). This roadmap—the FA Campaign Plan—is an adaptive long-term initiative, charting FA's path into the 21st century.

As we developed the FA Campaign Plan, it was clear that it would have to be an iterative, responsive process. Operations tempo, repetitive nonstandard missions, the effects of modularity and a rapidly increasing lethal and nonlethal skill-set were just a few of the factors that have caused significant atrophy in FA core competencies. This atrophy has left the Branch unbalanced and not postured for the future.

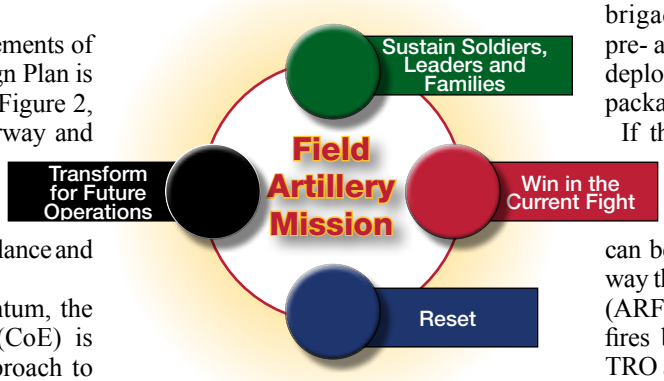
We can *and are* executing elements of our plan now. The FA Campaign Plan is divided into three phases (see Figure 2, Page 3). Phase I is well underway and will be complete by December. However, before we can set the Branch on a long-term path forward, we must reestablish balance and set the conditions for success.

To continue to build momentum, the Fires Center of Excellence (CoE) is executing a three-pillared approach to provide brigade combat team (BCT) and division commanders increased fires oversight, experience and training capacity in their formations. This will allow us to rebalance the FA to provide effective "24/7" fire support to the maneuver commanders. The pillars are to restore senior leader oversight, rebuild the FA experience base and reestablish a training capacity.

Restore Senior Leader Oversight. The removal of division artilleries left FA without senior Artillery leader training and readiness oversight (TRO) of its units and Soldiers. Surveys of the maneuver commanders have led us to two solutions—increase the number of fires brigades and establish the fires battalion commander as the BCT fire support coordinator (FSCOORD).

Increase the Number of Fires Brigades. The message from every division commander we surveyed is loud and clear—each wants a fires brigade both to provide TRO of his fires system when training and to serve as his force FA (FFA) headquarters (HQ), a capability now only provided by the fires brigades, when the unit deploys.

Providing TRO for fires across a division requires the experience and resources of a senior Artillery commander and his staff. The fires brigade commander can serve as the division commander's eyes and ears for lethal and nonlethal fires at home station and in theater, help the BCT commander certify his fires battalions and apprise both of them on the readiness of their fires systems.



It is difficult for the Army to provide this capability to commanders. There are not enough fires brigades to provide the TRO and FFA HQ capabilities commanders want—while at the same time executing the variety of missions in support of current operations. The current supply of fires brigades cannot meet the demand.

The Army recognizes the need for more fires brigades. The current Total Army Analysis (TAA) established the requirement for three additional brigades to meet the increasing demand. This is the first step. This TAA requirement now must compete with other requirements for resourcing.

The sensing that I have from division and corps commanders is that they believe fires brigades should be high on the TAA resourcing board's prioritization list. I have asked division commanders to identify their requirements for fires brigades to support their division's pre- and post-deployment missions and deploy as part of the division's force package.

If there are enough fires brigades to facilitate home station training and deployment support for every division, then the fires brigades can be aligned with the division all the way through the Army Force Generation (ARFORGEN) cycle. This ensures the fires brigades are available to provide TRO and FFA HQ support and expertise to the BCT and division commanders when required.

We need additional fires brigades. That said, there are many important requirements competing within the TAA for a finite set of resources. In the end, the

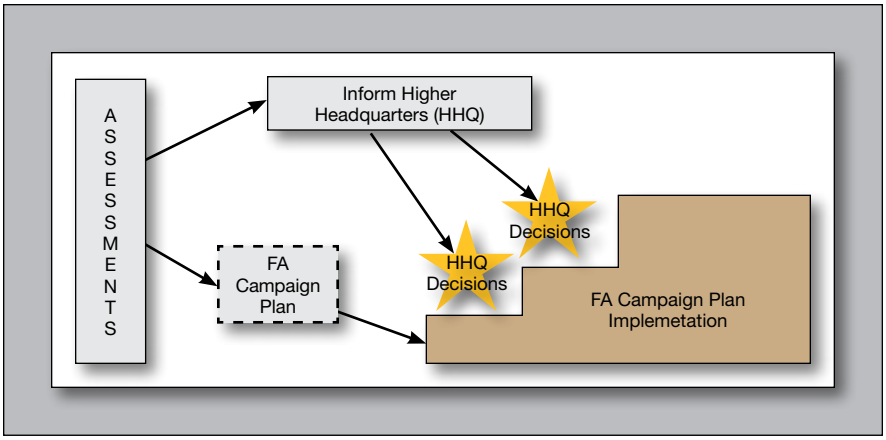


Figure 1: Implementation of the Field Artillery (FA) Campaign Plan

Army will prioritize its requirements and then resource accordingly. This process will be completed soon, and the Army will publish the Army Structure in the first quarter of fiscal year (FY) 2009.

Establish the Fires Battalion Commander as the BCT FSCOORD. Current doctrine assigns the BCT FSCOORD responsibilities to the senior Artillery officer on the BCT staff, not the fires battalion commander within the BCT. An unintended consequence is that there is no single leader—no sole point of contact—responsible to the BCT commander for the entire fires system in the BCT. Currently, the fires battalion commander has readiness responsibility for his battalion, but the BCT staff officer is responsible for the fire supporters on the brigade staff and in the maneuver battalions. We have found that BCT commanders are changing this arrangement in the field.

The current doctrinal FSCOORD arrangement also has complicated the fires coordination and advice mechanisms within the BCT. The BCT FSCOORD—the staff officer—is charged to be the senior fires coordinator and advisor to the BCT commander even though the fires battalion commander is more experienced and, as a fires commander, can ensure coordination better. This creates a clumsy and confusing fires chain of responsibility in the BCTs—an observation reinforced by more than 25 BCT commanders who all say they want their fires battalion commanders to be the FSCOORD. If the BCT commander controls his organic assets, it seems logical that he will want to go to a "green tabber" to "fix fires." That green tabber should be the fires battalion commander.

In July, we recommended to Training and Doctrine Command (TRADOC) that we doctrinally make this change. The Commanding General (CG) approved the change and directed us to coordinate with the Combined Arms Center (CAC), Fort Leavenworth, Kansas. He also noted that the FSCOORD should recommend to the BCT commander the location of BCT fire supporters that best allows execution of training, ensures proficiency and supports the maneuver commanders. We are coordinating this action with CAC, and the change will be reflected in *Field Manual (FM) 3-09 Fire Support* that will be published in December. We are coordinating with the Infantry and Armor Schools to insert the changes in *FM 3-09.6 The Brigade Combat Team* as well.

Of note—many BCT commanders *already have designated their fires battalion commanders as their FSCOORD* and *charged them with the responsibility for readiness of the entire BCT fires system*. Some BCTs and divisions also have moved their fire supporters back into the fires battalions and are reporting very good results. If the fire supporters remain in the maneuver battalions, the fires battalion commander must have the authority to manage their training and professional development.

Rebuild the FA Experience Base. Repeated nonstandard missions have contributed to a degradation of FA lethal core competencies. The Fires CoE is addressing this issue by improving and expanding institutional training to rebuild the FA experience base.

Expand Officer and NCO Education System (OES and NCOES) Courses. In January, a redesign of the FA Captain's Career Course (FACCC) increased focus on essential skills for the current fight. This redesign left very little flexibility in the program of instruction (POI) and *no opportunity or time* to "re-Red" leaders in the core lethal Artillery skills that have atrophied while performing nonstandard missions in theater.

To fill this training gap, we recommended an expansion of the FACCC from 20 to 24 weeks and an expansion of NCOES courses—some by as few as three days and others up to three weeks. This initiative was approved. This extra time will allow more intensive instruction on core lethal Artillery tasks. We will take a holistic look at the entire POI to see where we may need more emphasis—and therefore more time to teach. We are working with the TRADOC staff to identify and manage the second- and third-order effects of this decision and will move forward aggressively with implementation. Our target date for the 24-week FACCC is first quarter FY09. NCOES courses will be modified consistent with resourcing, with a target of full implementation by the end of the first quarter FY09.

The TRADOC CG also directed that we look at a compressed temporary duty (TDY) option for the expanded FACCC—designed for those officers who want to attend the FACCC and then return to their units to take command or become a battalion fires support officers or for Reserve Component (RC) officers who have a difficult time extending their time on active duty for schooling. This option might include a distance-learning component or a more aggressive (six days per week) class schedule. We are developing courses of action and intend to conduct a pilot course in early FY09.

A thought on FACCC—many FA captains are delaying FACCC attendance because they want to stay in their current units *or* they feel they will be sent on military transition teams (MiTTs) following graduation. The numbers do not support the last assumption. From the past three FACCCs, less than 15 percent of officers have been sent on MiTTs after graduation—in the most recent FACCC, the number was only 10 percent.

There is a reason for this. We have coordinated a solution with our Air Defense Artillery (ADA) brothers. They have agreed to take about one-third of the FA captain MiTT requirements we've had in the past. ADA captains are coming to Fort Sill and receiving training on call-for-fire and close-air-support tasks. The end result is that *fewer FA captains will go on MiTTs right out of the FACCC.*

It is important that captains attend the FACCC—especially before battery command. A TDY option will help to send great officers to school and then back to their units when they graduate.

Expand Fires Instruction at Intermediate Level Education (ILE). ILE provides the last opportunity for both FA and maneuver officers to gain a higher-level proficiency in fires during their field grade years. There are already courses at ILE that provide fires training. These electives are being refined so that they will provide master's-level expertise. There essentially will be two fires courses—fires mastery for Artillery officers (a more technical course, very similar to our FSCOORD course at Fort Sill) and fires integration proficiency for maneuver officers. We will bring in many guest instructors and subject matter experts (SMEs) to provide a well-rounded graduate.

Both FA and maneuver officers at ILE should broaden their mastery of fires and fires integration by taking these electives while at ILE. Future BCT commanders also can request a personalized fires block of instruction during their pre-command courses at Fort Leavenworth. We will design a product especially for them and travel to Fort Leavenworth to present it. At the Fires CoE, we will put mobile training teams (MTTs) on the road to provide fires leader training to maneuver leaders and staffs as well as FA units.

Reestablish a training capacity. The FA School and Fires CoE have created several other solutions for units to address specific training issues at home station or in theater. MTTs and online "Reachback" programs are two of these initiatives.

MTTs. MTTs are a key component of the Fires CoE support to operational units. MTTs are packages of SMEs who travel to units to provide both maneuver and FA commanders with training capacity or training expertise *during either the predeployment or reset phases* of the unit's training. MTTs should be tied to ARFORGEN—scheduled by the requesting unit through Forces Command (FORSCOM) and at the ARFORGEN Synchronization Conference—to support their rotational training needs.

- **Phase I - Organization and Preparation: Gather information and resources and begin implementation (complete by 1 December).**
- **Phase II - Rebalance the Artillery: Execute bridging or interim solutions to arrest atrophy while working toward enduring programs.**
- **Phase III - Posturing for the Future: Set the course to maintain balance and keep the Artillery prepared throughout the era of persistent conflict.**

Figure 2: The FA Campaign Plan is divided into three phases.

There are FA MTTs training units now. These MTTs train NCOES courses, Artillery section and platoon skills, joint fires observers, the Tactical Information Operations Course and a variety of other Artillery and joint fires courses. So far this year we have conducted 26 MTTs and have 10 more scheduled—but this does not meet the current demand. All of these teams are resourced "out of hide" with FA school instructors and cadre who go on MTTs when they are not training resident students at the Fires CoE. If there was a bigger pool at the Fires CoE to draw from, there could be many more MTTs.

The Fires CoE and TRADOC are working to establish a formal MTT capability at Fort Sill designed to provide core competency training to fires battalions at their home stations. The team will be modular. BCT commanders request only the training packages their BCTs need—from howitzer section to a complete fires battalion training set. Divisions will schedule MTT support during the ARFORGEN conference and FORSCOM will manage the priorities.

We have identified to TRADOC what is needed to provide an immediate MTT capability to the field (active and reserve component). TRADOC is working to meet this need. If resources are available, we can field an increased number of MTTs very early in the first quarter of FY09.

We also are working to help the National Training Center (NTC), Fort Irwin, California, establish an exportable training capability—an exportable package that provides a combat training center-like experience to BCTs at their home stations. Ultimately, this capability will be resident at the NTC, but it may take some time to become established. Until this capability can be built, the MTT at the Fires CoE may bridge the gap and provide an exportable training capability-like function in addition to its primary function of training core Artillery competencies.

Improve the Fires Knowledge Network (FKN) Portal. The FKN portal is the entry point to the online resources of the Fires CoE and a link for FA and ADA units worldwide. The FKN portal provides the capability to download POIs, research FA or ADA weapons systems, link to an active or RC unit, participate in an online discussion, join a Warfighter Forum and perform a variety of other professional FA and ADA activities. It must be *the* hub in the exchange of fires knowledge.

The FKN portal is designed to enable users across the fire community to access the information quickly and easily. To assess its effectiveness, I brought in Soldiers, Marines, NCOs and officers to provide feedback about FKN. They provided valuable input and confirmed our suspicions—it is clear our initial effort, while innovative, missed the mark. The FKN portal is too clumsy and confusing and does not serve the needs of the warfighters in operational units.

The FKN portal was recently completely redesigned to make it *useful and relevant*. A team started from scratch to make the FKN portal a tool that is valuable for operational units and warfighters. As an example, there is an "ask" feature—a tool that allows a user to ask a fires question and receive an answer back within 48 hours.

There is also a feedback mechanism on the portal to highlight areas that need to be added, deleted or changed. We are looking to develop a "search" capability as well. I am considering options on how best to "tag" the volumes of data we already have to make it more accessible to the user.

Looking Ahead. I am confident that the bridging initiatives we are executing will pay big dividends for the Field Artillery and help us restore balance in the Branch. Senior leaders across the Army know the challenges that all branches are facing and are supportive of our solutions. It is imperative that we continue to implement these initiatives aggressively so that the Branch is postured for full execution of the FA Campaign Plan in FY09.

The *draft* FA Campaign Plan is on the FKN homepage for review and feedback. Commanders and command sergeant majors from fires battalions to fires brigades have received a note from me soliciting feedback, but anyone can provide feedback via FKN, email or the Fires CoE blog.

Disseminate the draft to the lowest levels and provide bottom-up refinement so we can support you and maneuver commanders best.

This is our campaign plan; your feedback is important and necessary. Visit FKN at **https://www.us.army.mil/suite/portal/index.jsp**.

Anticipate—Integrate—Dominate! Artillery Strong!

The FA NCO: Absolutely Mission Essential

By CSM Joseph D. Smith, FA

The US Army always has benefited from NCOs who could and did display initiative, make decisions and seize opportunities that corresponded with the commander's intent. These qualities are more important than ever in an Army at war. Despite technological improvements and increased situational awareness at every level, the NCO must make decisions that take advantage of fleeting opportunities on the battlefield.

Today, our Field Artillery (FA) NCOs face challenges that are unlike any in our past. FA NCOs are executing the full spectrum of operations—that means stability, support, offense and defense operations. And never before have our battlefields been more decentralized, our enemy more ruthless, and never have we had more potential for our NCOs to determine our success as a branch and an Army.

In Iraq and Afghanistan, we truly live in the era where tactical action by FA NCOs may have strategic consequences. To all our NCOs in the fight—make no mistake—your actions *do* have impact. You not only affect those serving on your left and right flank today, but also your fellow FA NCOs who will follow you in future rotations.

Today, our Field Artillery (FA) NCOs face challenges that are unlike any in our past. FA NCOs are executing the full spectrum of operations—that means stability, support, offense and defense operations.

The FA Mission. What we have learned after seven years of combat is that FA and our NCOs are *absolutely* essential to the success of our joint forces and the Army's combined-arms team—and will continue to be in the future. The requirement for indirect fire systems to support the US Army across the full spectrum of operations, 24 hours a day, seven days a week—regardless of the weather—continues. That requirement is legitimate and must be met.

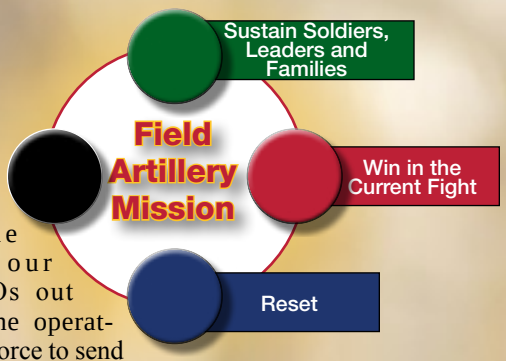
Combatant commanders are relying more and more on the precise and lethal fires that Field Artillerymen can deliver in both theaters of operation. We now have the ability to deliver devastating fires with pinpoint accuracy, using both cannons and rockets. Additionally, commanders are relying heavily on FA NCOs to plan, coordinate and synchronize nonlethal fires at all levels.

FA Soldiers are performing brilliantly in Iraq, Afghanistan, the Horn of Africa and several other countries around the globe. They are performing traditional and nontraditional FA tasks. These tasks include convoy security, counterinsurgency offensive missions, intelligence gathering, logistical support, forward operating base security and unmanned aircraft systems operations to mention a few. These Soldiers fully understand they are ambassadors representing their country as well as the US Army. It continues to amaze me how much we ask of these fine men and women—and how well they respond to every task. However, their determined efforts and success have come with a price.

Core Competency Retraining. We are experiencing a decline in FA core competencies due to both deploying repetitively on nonstandard missions and increasing our skill sets to include nonlethal fires. The FA leadership recognizes that, to maintain the excellence of our FA NCOs and Soldiers, we must take efforts to address the atrophy in our core competencies. Our NCO corps is the envy of professional militaries around the world; others can see the tremendous value of our NCOs' leadership in current operations. Therefore, we are pursuing initiatives aggressively at the Fires Center of Excellence, Fort Sill, Oklahoma, to regain our edge.

Mobile Training Teams. First, mobile training teams (MTTs) will play a more significant role in the "re-Redding" of our NCOs to conduct collective training on FA tasks. MTTs are really a growth industry for us due to the operational tempo and short reset periods between deployments. MTTs represent a capability that is required today because of the War on Terrorism (WOT). It is important to understand that if we truly believe in educating our NCOs, we must subscribe to the notion that we have to provide that education at all costs.

Thus far, we have succeeded in taking



some of our NCOs out of the operating force to send them all over the world to conduct training for our FA NCOs. Our MTTs focus on providing training to NCO leaders in all of our military occupational specialties. The MTTs are designed to train the trainer and to develop subject matter experts in each area so our units can regain their core skills.

Second, we are using MTTs to meet our NCO Education System (NCOES) demands to ensure relevance to present and future operations. There are many factors of current operations that impact our ability to train and educate our NCOs. Because of WOT and deployment schedules, it is difficult to get all of our NCOs into resident NCOES classes. MTTs will play a much greater role in meeting this demand. For example, one of our MTTs focuses specifically on the Master Gunner and the criticality of this position.

Master Gunner Training. The mission of the FA Master Gunner Course at Fort Sill and its MTT course is to train senior FA NCOs to plan, assess and evaluate Artillery training. The course has three modules—Training Management, Maintenance Training and Advanced Gunnery Training—which are sequenced progressively and interdependent of each other. The course focuses on safety, training management, advanced gunnery training, small arms weapon systems, integration of training devices, assessment of units and the development of FA certification programs to sustain and improve unit proficiency. All of these training modules are designed to address our core skills, and leaders who receive this training will be a tremendous asset to their units.

Specifically, we know the Master Gunner is the commander's and command sergeant major's (CSM's) weapons system expert on training, safety, ammunition, resupply and maintenance operations. He is assigned to the S3 section to

help train and certify crews, maintain the operational status of primary weapons systems and conduct certifications of unit commanders and leaders on weapons and digital fire direction systems. He also may train newly arrived Soldiers on the unit's particular weapons system(s). Thus, the Master Gunner is a critical member of the battalion's team to reestablish our core proficiencies.

The FA School recommends the Master Gunner—active duty or Army National Guard—be a sergeant first class and have at least one year's experience as a firing or ammunition platoon sergeant. It is also recommended he be a Battle Staff NCO Course graduate. This gives him the knowledge to provide logistical support for the close fight on today's battlefield as well.

Combined with his experience as a platoon sergeant, the course enhances his abilities to provide the battalion commander and CSM the accurate, detailed information they need to ensure the unit is trained and ready. During field operations, the Master Gunner can be an additional planner in the battalion tactical operations center.

Thus, the importance of MTTs to help FA Soldiers regain some of our core proficiencies will continue for the foreseeable future. I encourage units to take advantage of the training provided by these MTTs as they reset upon return to home station and as they prepare to execute future deployments.

I am confident that our FA NCOs will continue the fight with professionalism and discipline, and I am certain our reliance on our NCOs will lead to success. I challenge our FA NCOs to carry forward this noble tradition—established by NCOs of years past and still alive in the men and women who proudly fight today. Our Army and the Field Artillery depends on it.

Anticipate—Integrate—Dominate! Artillery Strong!

Command Sergeant Major (CSM) Joseph D. Smith, Field Artillery (FA), is the FA CSM at the Fires Center of Excellence, Fort Sill, Oklahoma. Previously he was the CSM for the 434th FA Brigade (formerly the FA Training Center) at Fort Sill. He served as the CSM for 3rd Battalion, 6th FA (1-6 FA) at Fort Drum, New York; the CSM for 1-15 FA at Camp Casey, South Korea; and the CSM for 1-82 FA at Fort Hood, Texas. He also served as the CSM for 3-6 FA at Fort Drum, deploying in support of Operation Iraqi Freedom.

SGT John Ray, B Battery, 5th Battalion, 25th Field Artillery Regiment, 4th Brigade, 10th Mountain Division, patrols Karadah, Baghdad, Iraq, 19 March. (Photo by SSG Jason T. Bailey, 1st Combat Camera Squadron)

Fire Support Just Got Harder:
Adding Nonlethal Fires as a Core Competency

"Fire Support is hard, especially if you are stupid." A "Sands of Iwo Jima" movie poster, with that humorous caption and John Wayne's grim face staring back at you as US Marine Corps Sgt. John Stryker, once hung in several offices of Fire Supporters at Fort Stewart, Georgia. The saying bears a serious truth in today's fight.

Fire support *is* hard, and Soldiers and Marines in the field depend upon fire supporters to deliver fires when and where they need them. The changes in *Field Manual (FM) 3-0 Operations* make the challenge harder—or at least more complex. The publication of *FM 3-0* now has established that the fires warfighting function includes both lethal and nonlethal fires.

By COL Frank J. Siltman and LTC John P. Frisbie, both FA

Recently at the 2008 Fires Seminar, the Combined Arms Center (CAC) commander, Lieutenant General William B. Caldwell IV, told the gathered leaders of the fires community that nonlethal fires are now a *required core competency* for the Field Artillery (FA). This core competency requirement of nonlethal fires was reinforced by Major General Peter M. Vangjel, the Chief of FA, in his future vision of the Branch as well as by multiple other presenters at the seminar.

So what does this mean for the Branch both institutionally and operationally? For FA, it means that we immediately have to redesign the training and education of our fire supporters to bring a balanced approached to understanding both lethal and nonlethal fires and to give them with the necessary skill set to be integrators of lethal and nonlethal fires. It also means we have to educate our maneuver commanders on this change, the implications, consequences and the new role in the integration of these capabilities we are bringing to their operations.

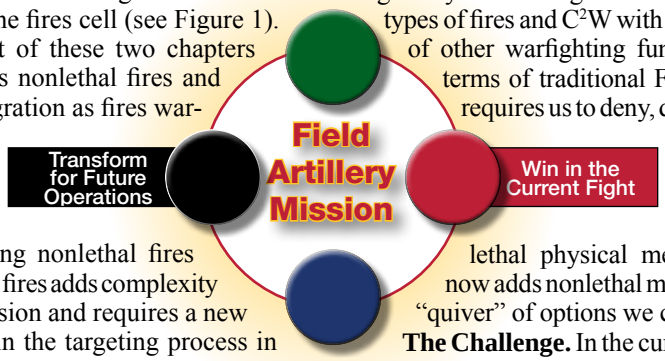
SFC Carlos A. Rosales, 2nd Battalion, 320th Field Artillery, 1st Brigade Combat Team (1 BCT), 101st Airborne Division (101st Abn Div) (Air Assault), hands a young boy a soccer ball during a combat security patrol near Dor Al Sinah, Iraq. Although the unit is involved in a full-spectrum combat operation, Soldiers from the battalion still make time during their combat patrols to offer humanitarian assistance to the local populace. (Photo by 1LT Jonathan Springer, 1 BCT, 101st Abn Div Public Affairs)

While almost all Field Artillerymen are comfortable integrating and employing cannon, rocket and missile fires, close air support and mortars as forms of lethal fires, the integration of nonlethal fires appears to be a paradigm shift for us. At first glance, the recent doctrinal changes may cause some fire supporters to see nonlethal fires as "just another rock in the fire support rucksack." It is not really a change. After thoughtful review, the new doctrine really only expands and formalizes the fire supporter's role as the integrator of *both* lethal and nonlethal fires. Since operations in the Balkans began in the early 1990s, commanders routinely have turned to their fire supporters to integrate nonlethal fires in an informal role. The change is that now it is a defined *doctrinal* role for our Branch.

Ultimately, the integration of nonlethal fires is a logical extension of our traditional roles in the integration of fires assets to meet the maneuver commander's intent, through the targeting process, to gain a desired effect on a target. As Artillerymen, we are used to seeing a target and directing lethal means on it. Now with a newly defined doctrinal role, the FA must change our mindset—our thought process—to look at a target and determine, "OK, I can kill it; but if I do, what do we stir up? Do I undo some progress with a certain group? Can I deny or disrupt their command and control (C^2) another way, or can I even destroy it without killing it?" That is the kind of thought process that has to become second nature for fire supporters now.

The Paradigm Shift. In close examination of *FM 3-0*, specifically Chapter 4, we find the addition of C^2 warfare (C^2W) and nonlethal fires integration to the fires

warfighting function. Chapter 7, Information Superiority, further defines C²W and in dissecting the Army information tasks, directs the integration of C²W to occur in the fires cell (see Figure 1). The result of these two chapters establishes nonlethal fires and C²W integration as fires warfighting function core competency.



Integrating nonlethal fires with lethal fires adds complexity to the mission and requires a new mind set in the targeting process in a world where the *King of Battle* has had a lethal focus in the past. This shift to balancing lethal and nonlethal fires requires the integrator to look at achieving commander's intent with expanded capabilities and an eye toward second and third-order effects, especially across the spectrum of conflict. In counterinsurgency or stability operations particularly, this extension of effects capabilities permits the fires integrator performing the targeting process to employ a range of options, while considering the likelihood that tactical actions often have strategic consequences.

In recent operations during the last few years, we in the FA have had a variety of non-fires related in-lieu-of missions. We all are aware that these missions have been executed superbly by Field Artillerymen. Now the Army has added a new task to our resume that is *very* relevant to integrating fires.

The emergence of these tasks of nonlethal fires integration and C²W into the fires warfighting function *doctrinally* confirms the fires responsibilities for nonlethal fires. It includes tasks associated with integrating and synchronizing the effects of these types of fires and C²W with the effects of other warfighting functions. In terms of traditional FA roles, it requires us to deny, disrupt and destroy enemy C² by more familiar lethal physical means—and now adds nonlethal means to the "quiver" of options we can apply.

The Challenge. In the current fight, fire supporters have been integrating information operations, electronic warfare (EW) and psychological operations into the targeting process for a long time. Now, added to our traditional mission sets of the delivery of lethal fires, counterfire operations and fire planning, fire supporters have documented performance of their nonlethal fires integration work.

Institutionally, the Fires Center of Excellence (CoE), Fort Sill, Oklahoma, now must train and equip leaders with skills to integrate joint, lethal and nonlethal fires. This change is a significant shift for Field Artillerymen who now must become the experts to integrate both lethal and nonlethal fires into operational planning, including both Army and joint capabilities.

An immediate concern is that we have to define nonlethal fires. For many, nonlethal fires may equate to the familiar idea of, "I can't define it, but I'll know it when I see it." Officially, *FM 1-02 Operational Terms and Graphics*, dated September 2004, defines nonlethal fires "as any fires that do not directly seek the physical destruction of the intended target and are designed to impair, disrupt, or delay the performance of enemy operational forces, functions, and facilities. Psychological operations, [EW] (jamming), and other [C²] countermeasures are all nonlethal fire options."

FM 3-0 Chapter 7, Information Superiority, defines C²W as "the integrated use of physical attack, [EW], and computer network operations, supported by intelligence, to degrade, destroy, and exploit the adversary's [C²] system or to deny information to it. It includes operations intended to degrade, destroy, and exploit an adversary's ability to use the electromagnetic spectrum and computer and telecommunications networks. These networks affect the adversary's [C²] or ability to communicate with an external audience. [C²W] combines lethal and nonlethal actions. These actions degrade or destroy enemy information and the enemy's ability to collect and use that information. The fires cell synchronizes physical attack, [EW], and computer network operations against enemy and adversary [C²]."

As we look forward and develop our fires doctrine nested within *FM 3-0*, we have developed some proposals for the new *FM 3-09 Fire Support* to try to define nonlethal fires clearly and how it then fits in to our fire support doctrine. While *FM 3-09* is still a draft and currently being staffed, the Fires CoE doctrine division received some guidance from the commandant and has developed the following.

Task	Information Engagement	Command and Control Warfare	Information Protection	Operations Security	Military Deception
Intended Effects	• Inform and educate internal and external publics. • Influence the behavior of target audiences.	• Degrade, disrupt, destroy and exploit enemy command and control.	• Protect friendly computer networks and communication means.	• Deny vital intelligence on friendly forces to hostile collection .	• Confuse enemy decision-makers .
Capabilities	• Leader and Soldier Engagement • Public Affairs • Psychological Operations • Combat Camera • Strategic Communication and Defense Support to Public Diplomacy	• Physical Attack • Electronic Attack • Electronic Warfare Support • Computer Network Attack • Computer Network Exploitation	• Information Assurance • Computer Network Defense • Electronic Protection	• Operations Security • Physical Security • Counterintelligence	• Military Deception

Figure 1: Army Information Tasks (*Field Manual 3.0 Operations*)

FM 3-09, paragraph 2-137, states, "Nonlethal fires are any fires that do not directly seek the physical destruction of the intended target and are designed to impair, disrupt, or delay the performance of enemy operational forces, functions, and facilities, or to alter the behavior of an adversary or enemy. Nonlethal fires options include elements of both information engagement and [C^2W]. Examples include artillery and air delivered leaflets, electronic attack, computer network attack, obscuration fires, and illumination fires."

We have tried to nest this into both *FM 3-0* and joint doctrine, while defining this in terms of fires and to provide a sound basis for the fires community to work as the integrator for these capabilities.

The Fix. So now we must fix this institutionally and train our leaders to equip them with the required skill sets. There are different requirements for training today—new requirements for building new core competencies. The fires warfighting function must incorporate the related tasks and systems that provide the coordinated use of Army indirect fires, joint fires and C^2W—including nonlethal fires—in the targeting process. This requires the changes listed in Figure 2.

The Army has identified FA as the bridging strategy for Army EW integration. To support C^2W integration, one immediate change must be the incorporation of nonlethal tasks into the core mission essential task list and into the collective tasks. Currently we are relying on sister services—Navy and Air Force—to provide EW officers (EWOs) to the ground forces in Operations Iraqi Freedom and Enduring Freedom.

- Establish nonlethal fires expertise and command and control warfare (C^2W) integration as a fires warfighting function core competency.
- Train nonlethal fires and C^2W capabilities.
- Train integration of nonlethal Fires and C^2W.
- Incorporate C^2W into the targeting process.
- Integrate operational functions of C^2W and nonlethal fires into operational planning.
- Incorporate organizational structure of C^2W and nonlethal fires into the fires cells.

Figure 2: Requirements for Building New Core Competencies

To provide our own institutional expertise and to "grow the bench," FA has assumed the EW integrator role with the Operational EW Course resulting in the awarding of the additional skill identifier (ASI) 1J. This ASI is being applied to second generation modified tables of organization and equipment for the nonlethal fires cell 13A FA Officer, 131A FA Targeting Technician and 13F Fire Support Specialist with skill level 3.

This six-week course is required for deploying units, brigade and higher, and prepares the EWO to plan, integrate and synchronize EW for the operational commander. This bridging strategy will put EW integration capability in the fires cell until the Army creates the enduring solution of an EW enlisted military occupational specialty, warrant officer and/or officer functional area.

Functional courses at the Fires CoE also integrate nonlethal fires to equip leaders going to operational missions. We currently teach the Tactical Information Operations Course (TIOC), the Fire Support Coordinator (FSCOORD) Course and the Joint Operational Fires and Effects Course (JOFEC). TIOC is nonlethal focused and provides leaders from staff sergeant through lieutenant colonel with training on basic information operations requirements to include EW, operational security and cultural awareness. The FSCOORD and JOFEC courses specifically are designed to train leaders at the brigade combat teams, divisions, corps and joint task forces on the planning, synchronization and integration of joint, lethal and nonlethal fires.

The Fires CoE also is adding nonlethal training to our officer, warrant officer and NCO Education Systems (OES, WOES and NCOES). Each of our professional military education courses now has nonlethal fires integration embedded into the courses so that all fires support leaders at all levels, from battalion through corps, have a working knowledge and basic understanding of the requisite skills they need to be the fires integrator for the commander. Lethal and nonlethal skills are core competencies for these leaders.

The Future of Fires. Today and in the foreseeable future, operations across the full spectrum require the commander and staff to rely on fires integrators to employ lethal fires and nonlethal fires in operations. As current operations dictate in stability and counterinsurgency operations, we find a greater need for integration of nonlethal capabilities to achieve campaign objectives. This requires that integration of lethal and nonlethal fires be an essential skill for Field Artillerymen.

Fire supporters must be educated in the application and integration of both lethal and nonlethal fires, through the targeting process, to gain desired target effects, while simultaneously understanding the second- and third-order magnitude of effects—all to achieve the commander's intent. It is our new doctrinal core competency as fire supporters, and the Fires CoE is moving now to equip our leaders and Soldiers with the skills necessary to accomplish the mission.

Colonel Frank J. Siltman, Field Artillery (FA), is Director, Directorate of Training and Doctrine/G3/5 for the Fires Center of Excellence, Fort Sill, Oklahoma. He served in the US Central Command J3 Plans and Policy Branch in support of both Operations Iraqi Freedom and Enduring Freedom; and commanded 3rd Battalion, 30th FA (3-30 FA) at Fort Sill. He was the Brigade Fire Support Trainer at the National Training Center (NTC) at Fort Irwin, California. He served as the Division Artillery S1, Fire Support Officer (FSO) for the 2d Brigade and Executive Officer for 1-9 FA, all in the 3d Infantry Division (Mechanized) at Fort Stewart, Georgia, where he deployed in support of Operations Desert Thunder II and Desert Fox. Colonel Siltman is a graduate of the Command and General Staff College, Fort Leavenworth, Kansas, and the Army War College, Carlisle Barracks, Pennsylvania.

Lieutenant Colonel John P. Frisbie, FA, is Chief of Nonlethal Fires and Electronic Warfare Subject Matter Expert within the Directorate of Training and Doctrine for the Fires Center of Excellence, Fort Sill, Oklahoma. He served as the Fire Support Officer, Information Officer and Public Affairs Officer for 2nd Brigade, 1st Armor Division, deploying in support of Operation Iraqi Freedom. He has served as S3 of 1st Battalion, 94th FA (1-94 FA), Assistant S3 and S4 for 1st Armor Division Artillery, all in Baumholder, Germany; and as Deputy Inspector General, Commander C Battery, 1-14th FA, and Operations Officer for 214th Field Artillery Brigade, all at Fort Sill, Oklahoma. He is a graduate of the Command and General Staff College, Fort Leavenworth, Kansas.

Fort Sill says 'Goodbye' to the AC BG Longo

The Field Artillery (FA) said goodbye to Brigadier General Richard C. Longo, FA School Assistant Commandant (AC) and Deputy Commanding Officer (DCO) of Fort Sill, Oklahoma, at a promotion and farewell ceremony on 2 July at the Old Post Quadrangle. He was promoted to brigadier general during the reveille ceremony.

General Longo was the Chief of Staff, US Army Pacific, Fort Shafter, Hawaii, before becoming AC/DCO. Before that, he was the Executive Officer to the Deputy Commanding General, US Army Europe and Seventh Army in Germany.

He commanded the 1st Infantry Division Artillery, in Bamberg, Germany, deploying in support of Operation Iraqi Freedom II, with duties as Commander of the Force FA Headquarters, Fire Support Coordinator and Commander of Task Force Dragon—a brigade-sized combat team.

Among other assignments, he served as Chief of Concepts Division, Futures Development Integration Center (Task Force XXI); G3 of III Corps Artillery; and Commander, 1st Battalion, 14th Field Artillery (1-14 FA), 214th Field Artillery Brigade, III Corps Artillery, all at Fort Sill.

General Longo now is the Director of Training, Department of the Army, G3/5/7, at the Pentagon, Washington, DC.

Colonel (COL) Annie Baker was the Interim AC/DCO for the US FA School and Fort Sill, until COL (P) Ross Ridge assumed the duties of AC/DCO on 8 September.

BG Richard C. Longo addresses the audience during his 2 July promotion and farewell ceremony at the Old Post Quadrangle, Fort Sill, Oklahoma. (Photo by Keith Pannell, *the Cannoneer*, Fort Sill)

Ridge previously served as the Chief of Staff, Strategic Effects Directorate, MultiNational Force, Iraq. He also served in the Republic of Korea as the Executive Officer to the Commander, United Nations Command/Combined Forces Command/US Forces Korea; Chief of Staff of the 2nd Infantry Division at Camp Red Cloud; and as the Commander of the 2nd Infantry Division Artillery at Camp Stanley.

Ridge served as the Deputy Commander for Operations Group, National Training Center, Fort Irwin, California; Commander of 2-8 FA, attached to the 1st Brigade, 25th Infantry Division; and as the Chief, Lethal/Nonlethal Effects Branch within the Training and Doctrine Command Brigade Coordination Cell responsible for the Army's new Stryker brigade combat team, at Fort Lewis, Washington.

He also served with the Joint Interagency Task Force—West in Alameda, California, where he was forward deployed to Bangkok, Thailand, as the Officer-in-Charge, US Pacific Command Counternarcotics Forward Detachment responsible for US Department of Defense counter-drug support for Southeast Asia. He deployed to Haiti in support of Operation Uphold Democracy, where he served as the Brigade Civil-Military Officer for Port-au-Prince.

Ridge has a master's degree in Administration from Central Michigan University and a master's degree in Strategy from the US Army War College.

Fires Call for Articles

"Those who cannot learn from history are doomed to repeat it." George Santayana

The *Fires* Bulletin is looking for Field Artillery (FA) and Air Defense Artillery (ADA) history articles for consideration for future editions so our Soldiers and leaders can apply past lessons learned to today's contemporary operating environment.

Submit an original, unpublished manuscript on any historical perspective of ADA, FA or fire support. Your submission should include a double-spaced, typed manuscript of no more than 4,000 words with footnotes, bibliography, your comprehensive biography and graphics (black and white or color photographs, maps, charts, etc.) to support your article.

The article should include an analysis of lessons learned or concepts that apply to *today's* FA and ADA—it should not *just* record history or document the details of an operation. Authors may draw from any historical period they choose.

Submit articles to firesbulletin@conus.army.mil. Attach (do not embed) photos with captions and photographer credits and graphics/charts with captions to the email. Do not resize, crop or otherwise alter photos.

American Soldiers are on the lookout for German snipers in Metz, France, November 1944. (Photo courtesy of US Army)

MTTs—Resetting FA Core Competencies

By CSM (R) Jeffrey L. Moyer, FA

PFC Jose Hercules, A Battery, 2nd Battalion, 82nd Field Artillery Regiment, 3rd Brigade Combat Team (3 BCT), 1st Cavalry Division (1st Cav Div), reacts to pulling the firing mechanism of an M109A6 155-mm Paladin system, 16 July, during a training exercise on Fort Hood, Texas, to prepare for the unit's upcoming deployment to Iraq. (Photo by PVT Sharla Perrin, 3 BCT, 1st Cav Div Public Affairs)

Due to the number of nonstandard missions Field Artillery (FA) is performing in the War on Terrorism (WOT), FA units across the Army need help restoring basic FA and fire support core competency skills. The Army and Training and Doctrine Command (TRADOC) are focused on helping units plan and conduct post-deployment training to restore core competencies.

As part of this effort, the US Army FA School (USAFAS), Fires Center of Excellence (CoE), Fort Sill, Oklahoma, has established FA Reset mobile training teams (MTTs). This article highlights what these MTTs can do and how the field can request them, as well as other available Reset training options.

Skills Atrophy. In initial operations in Iraq and Afghanistan, FA units performed their traditional mission of synchronizing the integration and delivery of timely and accurate cannon, rocket and missile fires to support maneuver forces. Today, FA units and personnel perform the full spectrum of nonstandard missions. In fact, some units have not conducted FA missions at all. Instead they perform as military transition team (MiTT) instructors to Iraqi army and police units, provide vital convoy and base defense forces and act as maneuver task forces with assigned areas of responsibility.

Other FA units perform split operations—part of the unit provides traditional fire support while another section, platoon or battery conducts nonstandard missions. These are just a few examples of the missions Artillerymen perform, but they demonstrate that Field Artillerymen are true *Pentathletes*. The cost, however, is that core FA skills have atrophied.

There are three tiers of training: institutional training, unit training and personal development/experience. In the past, units relied heavily upon unit training and personal experience. Also they had time during Reset to conduct individual and collective training to restore FA's hallmark high level of expertise and competence.

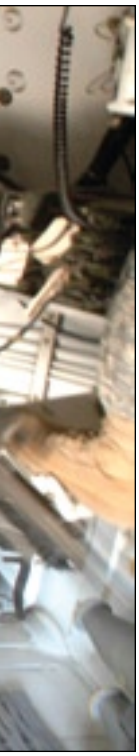
However, the old answer of "conduct sustainment training" is easier said than done—two conditions must be met. First, there must be enough time to conduct sustainment training, and second, there must be enough experience-based (and previously inherent) knowledge of the FA core-competency tasks. Today, given the truncated Reset phase available in the Army Force Generation (ARFORGEN) cycle, units require more institutional training. And, in the words of one senior NCO, "We've lost an entire generation of competence."

The challenge is training the FA force on its core competencies to doctrinal levels *and* conducting nonstandard-mission specific training in a very limited timeframe. Commanders always have dealt with insufficient time to train everything that their mission essential task lists require. This is even more difficult during the Reset phase of the compressed ARFORGEN cycle.

FA commanders frequently have 60 days or less to Reset and re-establish core competencies. Commanders often have to choose between training on the tasks their deployment mission requires or training on FA tasks for their Soldiers' future proficiency and professional development in their respective military occupational specialties. The reality is that FA commanders must prepare their units for the missions they will execute, whether a traditional FA mission or a nonstandard mission.

USAFAS Assistance. The USAFAS is addressing this issue within the institutional setting and by researching ways to support units better during limited Reset time. The Fires CoE leaders determined that USAFAS must provide units with Soldiers trained in the core FA skills required for both their current and future mission requirements. The School is training these Soldiers by offering commanders help in the form of MTTs that provide the training their units need *and* by improving institutional training.

MTTs. Important in restoring core competencies is to provide unit specific "tailored" training support. One method was to develop a "Reachback" capability via the Internet as web-based or downloadable files to provide units with training capabilities in the form of training support packages, interactive multimedia instruction and other educational training materials. This capability came online in May 2007. Another method is sending MTTs to train the units at their home stations.



MTT Support. To be effective, MTT support must meet each unit's specific training needs. To do that, MTTs must be able to provide the training support needed as determined by the unit commander.

While USAFAS is trying to support any request for training, the capability to do so without additional resources is a challenge. This difficulty is compounded with decreasing training resources as TRADOC manning (and funding) levels drop in order to provide Forces Command (FORSCOM) units with the highest personnel and equipment levels possible.

Despite this challenge, USAFAS has provided reset training to 15 active duty and National Guard FA battalions this year—both at unit home stations and in theater. The training has covered a variety of subjects, including FA Safety, manual and automated gunnery, MOS 13D Field Artillery Tactical Data Systems Specialist/fire direction center and digital (Advanced FA Tactical Data System or AFATDS) training, the U6 mechanic course, Improved Position and Azimuth Determining System (IPADS), MOS 13B Cannon Crewmember and M198 specific crew drill, and Master Gunner assistance. USAFAS also has provided limited help with section certifications, specifically Tables V through VIII.

Other training support capabilities can be added based upon requests from units, such as radar training. Each MTT is tailored to meet the commander's training needs, using any and all of Fort Sill's resources.

Requesting MTTs. Unit commanders must request MTTs as soon as they know they need help. USAFAS needs the earliest notice possible to develop and resource a plan to meet a unit's specific training needs. There are competing requirements for the personnel who provide MTT support. Leveraged instructors, for example, still must conduct all of their respective institutional and new equipment training. So some guidelines must be established and understood by the unit to enable USAFAS to assist them best.

Training requests must be submitted through the requesting units' chain of command, through FORSCOM to TRADOC, so that funding for the support is allocated with WOT funds. Ideally, requests need to be submitted approximately 120 days before execution to allow for coordination and staffing. This enables TRADOC to capture resource costs to establish a baseline for projecting future Reset training requirements.

The training must be short in duration—one to two weeks—for USAFAS to support it with existing resources. Although USAFAS can help the unit with section evaluations and unit SOP development, currently the capability and time to train entire units is limited. Finally, units must provide or coordinate for the equipment necessary to conduct the training.

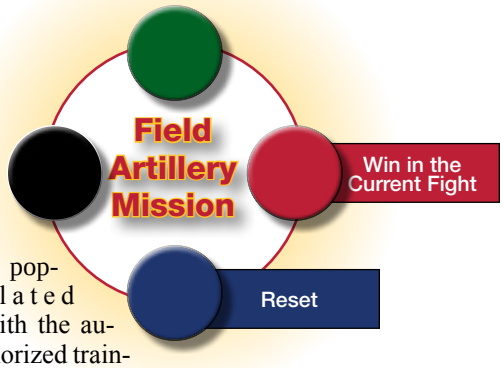
Institutional Training. Equally important in restoring core competencies is providing up-to-date institutional training. The Directorate of Training and Doctrine (DOTD) at the Fires CoE is developing a plan to improve the institutional training to help Reset the FA force. When Soldiers attend their professional military education (PME) courses, they train to establish the proficiency needed to perform the duties required of their respective ranks and military occupational specialties (MOS).

The FA courses already have been improved in several ways, from incorporating live-fire exercises in Basic NCO Courses to capstone exercises that involve Soldiers in Advanced Individual Training, the NCO Academy and all Officer Education System courses. Situational-based practical exercises provide a more realistic training experience and provide some of the core FA experiences.

Other Training. The Battle Command Training Center (BCTC) or BCTC hub is a digital systems training asset available on most major installations with little or no expense to the unit. These centers offer training support that can be requested online at **http://www-bctc.army.mil/**. The centers offer classroom instruction, such as AFATDS, All Source Analysis System-Light, Maneuver Control System, Force XXI Battle Command Brigade-and-Below/Blue Force Tracker, and Command-and-Control Personal Computer. These courses can be tailored to meet the unit's specific training needs.

The Army transformation makes maneuver commanders responsible for training their organic FA forces as well. FA leaders regularly brief a portion of the Armor and Infantry pre-command courses, emphasizing the unique training requirements for Field Artillerymen in their formations, as well as the capabilities those Soldiers bring to the fight.

Units deploying after August will be fielded with a new software program called the Unit Automated Reservation System (UARS). This program prioritizes scheduling requests for brigade combat team (BCT) commanders and helps brigade-sized units request and receive priority for Reset training. The program



is populated with the authorized training to fit the unit's respective table of organization and equipment mission.

UARS allows users to schedule training by timeframe, unit priority and method of delivery (MTT/Resident/Distance Learning). UARS covers any FA Reset MTTs, PME, functional and theater-specific training available. Fires battalions should coordinate thru their BCT S3 section for access to this program to request the specific training support they need.

FA leaders are developing plans for a larger Reset MTT program—one that complements the National Training Center's Exportable Training Cell at Fort Irwin, California, and the programs at Battle Command Training Program. If approved by TRADOC, USAFAS plans to implement and develop this expanded capability quickly to provide more resources to the field.

The FA Reset team informs commanders on capabilities through updates on Fires Knowledge Network, the commanding general's monthly e-note, the Redleg 7 Report, Fires and Effects video-teleconferences and during visits to units. Maintaining and restoring the core competencies of Field Artillerymen is Fort Sill's priority effort, and the Fires CoE is focusing all efforts to support commanders in the field with the training requirements they identify.

Input from the field is needed to ensure that USAFAS provides the support that units need. Email comments or questions to jeffrey.moyer@conus.army.mil or gordon.shaw@conus.army.mil.

Command Sergeant Major (CSM) Jeffrey L. Moyer, Retired, is the Deputy Branch Chief for the Field Artillery Lessons Learned/Reset Branch within the Training Development Division at the FA School, Fires Center of Excellence, Fort Sill Oklahoma. Before retiring from the Army, he was CSM for 4th Brigade, 75th Division; CSM for 1st Battalion, 19th Field Artillery (1-95 FA), both at Fort Sill; and CSM for 6-37 FA (Multiple-Launch Rocket System) at Camp Stanley, Korea. He also served as First Sergeant for Headquarters and Headquarters Battery, 6-29 FA at Idar-Oberstein, Germany.

Exportable and Mobile Simulations Support for Fires Training

By MAJ Nathan T. Sammon, IN

The Field Artillery (FA) faces a daunting challenge in maintaining proficiency in core fires tasks, while many units train for and perform nonstandard missions to support current operations. The FA Campaign Plan's goal is to transform FA so it can provide the capabilities required to support joint and maneuver commanders' abilities to dominate the operating environment now and in the future. Imperative to this goal is the need to transform how FA trains and learns.

In an environment that requires FA units to prepare for various mission sets, the focus must be on maintaining specific FA core competencies at master level, while supporting nonstandard mission preparation and execution. FA commanders require more external support and training resources to attain and maintain mastery of core FA individual and collective skills in less time.

To meet this need**,** the Fires Center of Excellence (CoE), Fort Sill, Oklahoma, must provide a more robust training support system that is exportable from the Fires CoE to FA units at home station.

Mobile training teams (MTTs) are a means of providing a more robust training support system. The FA Campaign Plan includes MTTs for various institutional courses and unit external evaluations with training support packages and simulations packages—either exportable with the MTTs or fielded at home-station locations to support FA commanders' training requirements. This article outlines the simulations technologies available to the FA commander now and future technologies that may be available as the Fires CoE leads the FA's transformation.

Current Simulations-Based Training Capabilities. Current simulations give commanders the ability to train individual military occupational specialty skills and battle-staff collective tasks.

FireSIM XXI. FireSIM XXI/Extensible Communications, Command and Control, Intelligence Instrumentation Suite (ExCIS) is the fires component of the Joint Land Component Constructive Training Capability-Entity Resolution Federation (JLCCTC-ERF) fielded by the National Simulation Center (NSC), Fort Leavenworth, Kansas, to battle command training centers (BCTC) and battle simulation centers Armywide for battle command training.

Although FireSIM XXI is not used often by BCTCs to train brigade combat team staffs, it is fielded and available for fires brigades' and battalions' use. The Fires CoE uses FireSIM XXI daily to train Soldiers and staffs. FireSIM XXI replicates high-fidelity behaviors of FA firing platforms and sensors including precision guided munitions, Future Combat Systems Non-Line-of-Site Cannon and Launch System (NLOS-C and NLOS-LS) with Precision Attack Munitions (PAM), as well as high-fidelity Class V expenditure for logistics tracking.

When employed with ExCIS, FireSIM XXI replicates fire direction software messages to stimulate Advanced FA Tactical Data System (AFATDS). FireSIM XXI can replicate both sensor and shooter behaviors and digital message sets to stimulate fire direction center (FDC) or FA battalion/brigade staff exercises when live sensors or shooters are unavailable for training. The FireSIM XXI capability is maintained by the Fires Battle Lab at Fort Sill and fielded to home-station BCTCs through the NSC. FireSIM XXI also is fielded for government use upon request by the Fires Battle Lab through separate distribution agreements with the user.

Call-For-Fire Trainer (CFFT). The CFFT is a virtual fire-support trainer developed by Program Executive Office-Simulations Training and Instrumentation (PEO-STRI) to fulfill the need for an observed fire-training device that supports all fire-support missions. The CFFT is a lightweight, rapidly deployable, observed fire-training system that provides simulated battlefield environments for instructing fire support specialists, joint fires observers (JFOs) and Soldiers at the institutional and unit levels.

There are three configurations of the CFFT—1:30 (one instructor to 30 students), 1:12 and 1:4. The 1:12 and 1:4 configurations are deployable CFFT trainers. The systems located at the unit level provide both familiarization and sustainment training for observed fire tasks to include Artillery and mortar missions and Type II and Type III close air support (CAS) missions for CFFT systems supporting JFO training at Fort Sill.

Fire Support Combined Arms Tactical Trainer (FSCATT) Phase I. The FSCATT Phase I was developed as a virtual trainer for howitzer crews, forward observers (FOs), and FDC personnel in either a stand-alone mode or networked together.

From left, 2LT Gina R. Burgett, 2LT John M. Allen and 2LT Joseph A. Balazs conduct joint fire training on the Joint Fires and Effects Trainer System on Fort Sill, Oklahoma, during their Basic Officer Leader Course III, 11 June. (Photo by Hiro Chang, *the Cannoneer*, Fort Sill)

Limitations in software development for the FSCATT Phase I along with fire direction software development present current limitations in training howitzer crews simultaneously with battery- and battalion-level FDCs and FOs. The Fires CoE Capabilities Development and Integration Directorate (CDID) is preparing a short-term technical solution that will reestablish the digital linkage between FO teams training in a virtual environment (such as a CFFT), FDC personnel training in a live or simulated FDC and howitzer crews in a virtual environment (FSCATT) module to enable observer-to-FDC-to-shooter training simultaneously. This is important particularly for units to maintain proficiency in these core skills when unit equipment is unavailable.

Future Simulation-Based Training Support. Future possibilities and initiatives exist to improve home station unit training capabilities with simulations technology support. The possibilities include concepts from mobile/deployable or fielded simulators for individual and collective skills training to exercise scenario support packages available to units through reach-back capability to the Fires CoE and exportable for use with MTT support.

Networked CFFT. In addition to re-establishing linkages between observer systems in the CFFT with AFATDS and the FSCATT, the Fires CoE CDID Fires Battle Lab conducted experimentation and testing to network the CFFT and Joint Fires and Effects Trainer System (JFETS) with the Close-Combat Tactical Trainer (CCTT) and Aviation Combined Arms Tactical Trainer (AVCATT) to provide a combined arms training capability in a networked virtual training environment.

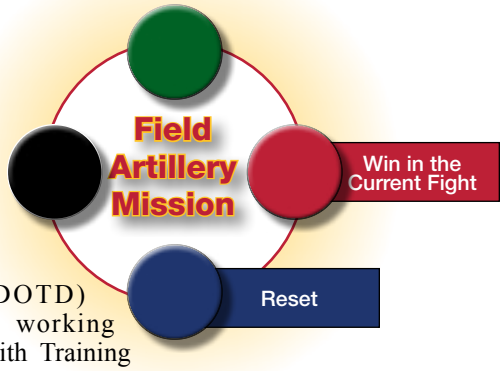
The Fires Battle Lab conducted these integration events in participation with the Maneuver CoE at Fort Benning, Georgia, and the Aviation CoE at Fort Rucker, Alabama, in support of the Future Aviation Simulation Strategy (FASS) Spiral Experiment in March, to demonstrate the networked capability. Each of these virtual training systems could be fielded to home station locations with support provided by local facilities and units or by subject matter experts as part of an MTT deployed from the Fires CoE.

The integration of these virtual trainers opens future opportunity for units and institutions to train as combined arms teams from home station facilities distributed over a long-haul network, bringing virtual fire support training together with ground maneuver and aviation training.

JFETS. The JFETS is an immersive virtual fire support trainer system developed in coordination between the Fires Battle Lab, Army Research Development and Engineering Command (RDECOM), PEO-STRI and the Institute for Creative Technology at the University of Southern California. Built upon initial CFFT software and capabilities, the JFETS includes software upgrades, immersive virtual environments and simulated military equipment hardware to train fires support specialists and JFOs in Artillery, mortar and Type I CAS missions.

The JFETS virtual modules include a fires cell module that is reconfigurable to meet any operations center layout, urban terrain module, open terrain module and CAS module. Each module can be operated stand alone or networked together to train multiple observers and a battle staff on the same terrain and scenario. The current modules exist at the Fires CoE as a development project for an institutional trainer. With approval of funding to meet training requirements, JFETS modules could be exportable to home station training sites as permanent facilities or as mobile modules.

Gaming for Training. The Fires CoE recognizes the role gaming can play in the capability of units and Soldiers to train and learn. One specific initiative currently under analysis and development is the Army Artillery Ballistics Concepts Trainer to address the need for junior officers to develop and master ballistics concepts and visualize the effects of inputs on munitions' accuracy. The Fires CoE Directorate of Training and Doctrine



(DOTD) is working with Training and Doctrine Command Capabilities Manager (TCM) Gaming to develop a gaming technology that will address this requirement. When fully developed, this technology would be available for distribution to FA users at the training institution and field units at home station and while deployed.

Battle Staff Training Support Packages. A future initiative in support of the FA Campaign Plan is development of training scenario packages that the FA commander can reach back to in support of his training objectives for battle command training events. The Fires CoE's vision is to provide various scenarios—complete with higher headquarters operation orders, mission supported events lists, terrain databases and proposed simulations technical architectures—that will reduce the burden placed on units to develop these types of training events under constrained timelines. These exercise support packages would exist as off-the-shelf products to meet a variety of battle command training objectives for FA battalion and brigade commanders and staffs.

Units must coordinate with TRADOC to procure these training aids according to the Vice Chief of Staff of the Army's 2 June memorandum.

The Fires CoE is ready to aid and support commanders in meeting their training requirements.

Major Nathan T. Sammon, Infantry (IN), is a Functional Area 57-Simulation Operations Officer, serving as Deputy Chief, Simulations Division for the Fires Battle Lab at Fort Sill, Oklahoma. He has served in combined arms assignments as Commander of Troop A and Assistant Operations Officer for 2nd Squadron, 9th Cavalry, 4th Infantry Division, Fort Carson, Colorado, deploying in support of Operation Iraqi Freedom (OIF). He served as Commander of A Company, 1st Battalion, 12th Infantry Regiment (A/1-12 IN), 4th Infantry Division at Fort Carson; and as Battalion Maintenance Officer for 1-12 IN, deploying in support of OIF I.

The author would like to thank SFC Robert M. Castillo, Operations NCO for the Fires Battle Lab, Fires Center of Excellence, for his contributions to this article.

Departing Thoughts from the AC, USAFAS

By BG Richard C. Longo

It has been an honor to serve as the Deputy Commanding Officer of the US Army Fires Center of Excellence (CoE) and Fort Sill, Oklahoma, and as the Assistant Commandant (AC) of the US Army Field Artillery School (USAFAS) this last 10 months. During this time, I became intimately aware of the challenges FA faces to reestablish its core competencies while continuing to support the many challenges of the current fight. I remain in awe of the unmatched focus, drive, dedication and excellent performance by all staff, instructors, Soldiers and students of the Fires CoE and the FA School.

The overarching focus of all efforts at the Fires CoE and USAFAS is to support the maneuver commander and Major General (MG) Peter M. Vangjel's FA Campaign Plan published in April and presented at the Fires Seminar in June.

The "New" FA Mission. In the FA Campaign Plan, MG Vangjel, as Chief of the Field Artillery, defined FA's new mission: "The mission of the Field Artillery is to integrate and deliver lethal and nonlethal fires to enable joint and maneuver commanders to dominate their operational environment across the spectrum of operations."

Although our more experienced Redlegs may take some offense, the old mission of "destroy, neutralize and suppress" just does not get at the complexity of integrating lethal and nonlethal fires in the current or future operating environment.

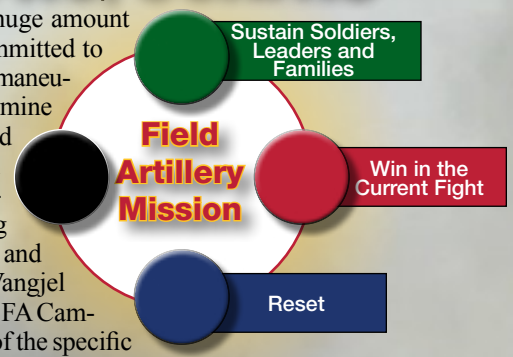
In fact, precision munitions have proven so successful in the current fight that Guided Multiple-Launch Rocket System (GMLRS) has often been referred to as the "the 70 kilometer sniper rifle." Also, Excalibur munitions delivered by both the Paladin M109A6 and M777A2 lightweight 155 (towed) howitzer platforms have proven very successful when the commander on the ground need a lesser payload than the GMLRS for a tactical situation.

Other efforts to deliver just the right amount of precision munitions include the fielding of the Non-Line-of-Sight Launch System (NLOS-LS) "rockets in a box," and the use of Precision Strike Suite-Special Operation Forces software as well as efforts to digitize the M119A2 (towed) howitzer.

Any Soldier who has been deployed will tell you that sheer firepower alone is not enough to win in today's complex environments. Instead, the joint delivery of lethal and nonlethal fires is what maneuver commanders will depend on from Redlegs for future conflicts similar to today's in Iraq and Afghanistan. Individual FA Soldiers have answered the call with each deployment by bringing their well-honed skills at integrating all forms of fires.

As MG Vangjel points out, FA must "*Anticipate, Integrate, Dominate!*" These short phrases and the new FA mission statement provide the challenge to "get out of the rut" and find new, innovative ways to train FA leaders who are adaptable, competent thus confident, self-reliant leaders.

Overall, the FA Campaign Plan will enable the FA to meet our maneuver commanders' desire for FA formations that can synchronize and deliver precise, lethal fires or nonlethal fires in the format of information operations or electronic warfare or by using FA Soldiers in nonstandard FA missions.



FA Campaign Plan. A huge amount of time and effort was committed to survey our customers—the maneuver commanders—to determine exactly what they needed from their fire supporters. After compiling all of the input from the field, analyzing where the FA community is and where it needs to go, MG Vangjel and his staff completed the FA Campaign Plan in April. Some of the specific objectives of the FA campaign are listed in the figure.

To accomplish the far-reaching goals of the FA Campaign Plan, MG Vangjel directed the Fires CoE and USAFAS to focus on four lines of effort: Reset; Win the Current Fight; Transform for Future Operations; and Sustain Soldiers, Leaders and Families. To support those four lines of effort, there are 20 campaign objectives, 64 supporting objectives and 149 tasks in this "living, breathing" document—all with the end state of providing adaptive, resilient and indispensible FA formations. The FA Campaign Plan draft can be found on the front page of the Fires Knowledge Network website.

Some of the key points of the Reset line of effort are as follows. Reset is the systemic effort where we reman, reequip and retrain to maintain core competencies—very similar to what we used to call reconstitution. Fires battalions must have help to reset, and the Fires CoE must play an integral role in providing reset assistance.

At the task level, for example, this might mean that the Fires CoE would provide Reset training models to the force, provide mobile training teams at the units' locations or determine how to create the ability to conduct external evaluations for brigade combat teams' organic fires battalions.

The Transformation line of effort includes integrating the development of future force capabilities within an overarching campaign framework and maintaining an adequate balance of near-term, midterm and long-term efforts. At the task level, this could mean establishing one fires brigade per division, depending on the outcome of the Total Army Analysis; consolidating fire supporters as part of the fires battalion; providing the field with systems focused on accuracy, speed and mobility; digitizing the M119A2; fielding precision munitions to the light forces; enhancing the capabilities of our long-range mounted observers; and changing Fires Knowledge Network to a more interactive blog-like site.

Key points regarding the Sustain Soldiers, Leaders and Families line of effort would include the obvious goals of reversing the degradation of individual core competencies and relieving the stress on

FA Soldiers, leaders and families resulting from multiple deployments.

FA School. It was one thing to understand the MG Vangjel's vision, but it was quite another to "jump out there" as the AC of USAFAS and begin to grow these Soldiers, NCOs and young (and some more mature) officers to be the new FA subject matter experts, well-grounded in integration of lethal and nonlethal fires in a joint environment.

To meet that challenge as the AC, I focused our efforts on establishing and implementing policies that enhanced the techniques and procedures used to train officers, NCOs, Soldiers, Marines and students from allied nations.

I directly challenged the FA school leaders to use their extensive combat experience, their abilities to transform lessons learned—at the tactical, operational and strategic levels—and insight into the students' educational psychology to revamp all institutional training systems completely to focus on training adaptable and agile junior and senior leaders. These tireless efforts of officers, NCOs and Department of the Army civilians led to major innovations in the FA Captain's Career Course (FACCC) and Basic Officer Leader Course Phases II and III as well as continuing improvement and relevancy in the Fire Support Coordinator (FSCOORD), Electronic Warfare, Tactical Information Operations, Joint Forward Observer and the Joint Operational Fires and Effects courses.

One center of gravity of our efforts was to maximize all FA assets to support the FA Campaign Plan focus on FA Reset training for all active and Reserve Component FA units. These efforts directly led to establishing critical FSCOORD and Fires Brigade Warfighting Forums for all FSCOORDs and fires brigade commanders to share issues and ideas with their peers in a virtual "community of purpose."

At the same time, I challenged all our leaders to help integrate the Air Defense Artillery (ADA) School into Fort Sill. In this challenging undertaking, countless hours of hard work on behalf of Fort Sill and Fort Bliss military and civilian personnel have moved the US Army immeasurably forward and laid the ground work for the Fires CoE at Fort Sill.

The Way Ahead. The forward-thinking vision laid out in the FA Campaign Plan also led to the analysis necessary to potentially combining FA and ADA Captain's Career Courses and NCO Educational System to maximize use of limited resources. The potential of merging the educational programs of instruction (but not the branches) is something we are studying very closely.

Lastly, I leave Fort Sill to go to my new duties as the Director of Training, Department of the Army, G3/5/7, at the Pentagon with a good feeling of helping to "get the ball rolling" at Fort Sill—to assist, as the CG says, in the "Return of the King." I am convinced that Fort Sill can tackle this challenging mission of training technically and tactically competent FA leaders who will be able to *Anticipate, Integrate and Dominate* the battlefield once again as the *King of Battle*.

I believe we have "cracked the code" on where we need to focus and what is the way forward to provide maneuver commanders with joint lethal and nonlethal fires in a timely and accurate manner. I won't be naive and say there won't be many challenges in the days ahead, such as funding, operational tempo, personnel shortages and persistent global conflicts; however, we now have a bold, clear, strategic vision for the way ahead for the FA Branch.

I have *absolutely* no doubt that we are well on the road to rebuilding and redefining the FA for the near term as well developing far-reaching future capabilities to support joint and maneuver commanders well into the 21st century. *Artillery Strong*.

- Reemphasize Field Artillerymen as the Army's integrators of both lethal and nonlethal fires.
- Develop exportable training and education programs and simulations.
- Expand the role of the Fires Center of Excellence, Fort Sill, Oklahoma, as the Army's Field Artillery proponent.
- Redefine the institutional education construct to meet the changing need of 21st century Artillerymen.
- Transform the Fires Knowledge Network to provide an interactive, responsive and comprehensive "Reach-back" capability.
- Redefine the core competencies required of individual Artillerymen and fires units at various echelons.
- Develop and field "coalition friendly" command and control and fire control systems.
- Field the weapons systems, munitions and materiel needed to defeat 21st century adversaries.

Field Artillery Campaign Plan Objectives

Brigadier General Richard C. Longo is the Director of Training, Department of the Army, G3/5/7, at the Pentagon, Washington, DC. Previously, he was Deputy Commanding Officer of the Fires Center of Excellence and Assistant Commandant, US Field Artillery (FA) School, Fort Sill, Oklahoma. He has served as Chief of Staff, US Army Pacific, Fort Shafter, Hawaii; and the Executive Officer to the Deputy Commanding General, US Army Europe and Seventh Army in Germany. He commanded the 1st Infantry Division Artillery, Bamberg, Germany, deploying in support of Operation Iraqi Freedom II, with duties as Commander of the Force FA Headquarters, Fire Support Coordinator and Commander of Task Force Dragon for the 1st Infantry Division. He also served as Chief of Concepts Division, Futures Development Integration Center (Task Force XXI); G3 of III Corps Artillery; and Commander, 1st Battalion, 14th Field Artillery, 214th Field Artillery Brigade, III Corps Artillery, all at Fort Sill, Oklahoma. He is a graduate of the Army War College at Carlisle Barracks, Pennsylvania.

Soldiers with 3rd Battalion, 321st Field Artillery Regiment, 18th Field Artillery Brigade, fire an M-777 howitzer during a training exercise on Forward Operating Base Salerno, Afghanistan, 28 February. (Photo by SPC Micah E. Clare, 4th Brigade Combat Team, 82nd Airborne Division)

FACCC: Redesigned for Today and Tomorrow

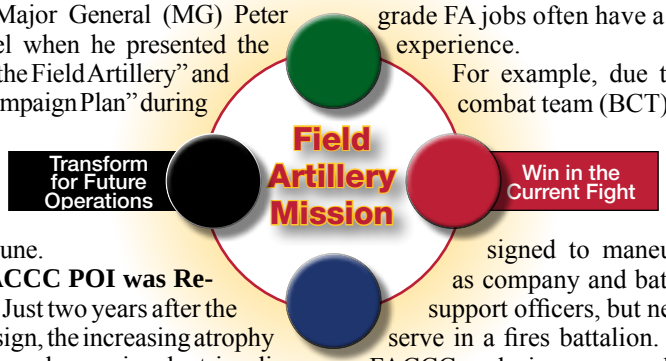
By MAJ Peter M. Sittenauer and MAJ Cornelius L. Morgan, both FA

Within the last three years, the Field Artillery Captain's Career Course (FACCC) has undergone two major redesigns; a third major redesign will be implemented soon, and a fourth one has been proposed.

The first redesign, in 2006, met the challenges, demands and skill sets required by the contemporary operating environment (COE). (See "Rapid Redesign of FACCC: A Four-Week Process for Updating Courses for an Army at War" by Major Robert A. Krieg in the July-August 2006 edition of *Field Artillery*.)

The second redesign, released in February of this year, met the challenges posed by a corps of young officers who lack artillery experience, aligned the program of instruction (POI) with emerging doctrine (including *Field Manual [FM] 3-0 Operations, FM 3-24 Counterinsurgency* and draft *FM 3-09 Fires Support*), incorporated lessons learned from past redesigns and, again, revamped the training required for the changing COE.

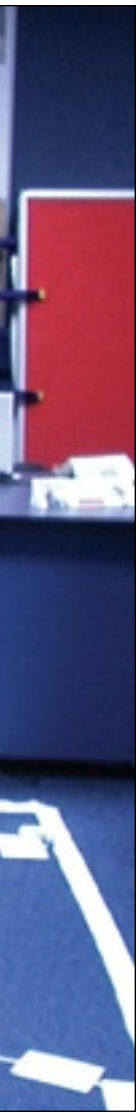
Lethal skills atrophy is the most pressing concern facing FA forces and is the reason behind the next major redesign—extending classes from 20 to 24 weeks—and a proposed redesign that would extend classes to 36 weeks. As Artillerymen continue to conduct an overwhelming number of nonstandard missions, they continue to degrade their abilities to provide lethal fires. This concern, based upon feedback from maneuver commanders in the force, was stated by Chief of Field Artillery Major General (MG) Peter M. Vangjel when he presented the "Status of the Field Artillery" and the "FA Campaign Plan" during the Fires Seminar at Fort Sill, Oklahoma, in June.



Why FACCC POI was Redesigned. Just two years after the 2006 redesign, the increasing atrophy of FA skills and emerging doctrine dictated a need for a redesign of the FACCC. Two FACCC classes—Class 2-08 and Class 3-08, which graduated in June and August, respectively—have attended and given feedback on the newest FACCC redesign (see Figure 1).

Atrophy of FA Skills. Surveys performed in December 2007 at the FACCC identified that two out of every three captains reporting to the course have not performed traditional company-grade FA tasks or basic Artillery skills they learned at their FA officer basic courses. Furthermore, today's FACCC students who did have traditional company-grade FA jobs often have a polarized experience.

For example, due to brigade combat team (BCT) modularity, many young FA officers are assigned to maneuver units as company and battalion fire support officers, but never get to serve in a fires battalion. The 2006 FACCC redesign assumed that the students had experience in FA functions. Although we don't have a similar



Field Artillery Captain's Career Course 6-07, Section 1, conducts a combined arms rehearsal. (Photo by Captain Claude Legendre, Canadian Army, Small Group Instructor, FACCC)

statistic to compare to, it is highly likely that today's pool of students increasingly are experienced at the skill sets required of stability operations and have practically no experience in performing FA functions when compared to the FACCC students of two to three years ago.

New Educational Demands. In redesigning the current course, the FA School realized that the POI must meet the student's educational demands based upon their experiences or lack thereof. So, the school focused on redesigning the POI to reset the students' FA knowledge base and on taking the instruction of stability operations (to include counterinsurgency or COIN) to the next level.

The FACCC always has taught battalion fire support planning and FA battalion planning. However, previous methods of instruction assumed that FA captains already had developed a base understanding of maneuver and fire support/FA battalion operations. Today, the school can't make that assumption.

Emerging Doctrine. Since the initial POI redesign in early 2006, *FM 3-24* and the newest edition of *FM 3-0* were published. These two significant pieces of Army doctrine dramatically affect operations in the COE. In addition to the recent release of *FM 3-0*, doctrine developers are continuing to draft a new *FM 3-09* that will serve as the catalyst to update all fire support doctrine. Based on these and other doctrinal changes still in progress, the need to update the FACCC classes and perform some restructuring of the POIs was obvious.

The Current FACCC POI. Changes to the current POI were incorporated to meet new educational demands and included both emerging doctrine and technologies. Changes include a new command and control module; more in-depth instructions on how to coordinate nonlethal fires; updated COIN theory, planning and application instructions; and practical exercises modified to meet current doctrinal information.

Meeting New Educational Demands. The FA School deliberately redesigned the POI to provide FACCC students with instruction that could serve in lieu of fire support and FA experience they may have missed in their initial assignments.

Students first need to understand basic offensive and defensive maneuver operations and tactics in major combat operations thoroughly. The school added one week dedicated to offensive operations and another week to defensive operations by using the *FM 3-90* series of manuals as references. These two weeks include several injects of fire support considerations and practical exercises, challenging students to consider how they—as future battalion fire support officers and fires battalion staff officers—can support their maneuver commanders best with coordinated and integrated fires. This teaches them the "art" of fires planning.

Then, the course begins to teach the science of fires planning, spending one week on how to plan fires as part of a maneuver task force and as a staff officer in a fires battalion. Students are required complete up to seven practical exercises individually and as a group in preparation for their midterm exams, during which they will be tested on developing operational plans.

After midterm tests, all students are taken on a staff ride to the battlefield at Pea Ridge, Arkansas. Added in the redesign, this is the culminating event for major combat operations at the battalion level and above. Students are required to study this historical battlefield, describe the maneuver tactics used and how planning and leader decisions affected the outcome of the battle. This analysis of Pea Ridge fosters officer professional research and self-study development.

Gunnery	Joint and Combined Arms		Battery (Btry) Command
3 Weeks	14 Weeks		3 Weeks
Module 1: Ballistics and Manual Safety **Module 2: Advanced FA Tactical Data System** • Mission Processing • Database Management • Fires Planning • Automated Safety **Module 3: Gunnery Troubleshooting and Tactical Fire Direction**	**Module 1: Command and Control** • Effective Communications (Written/Spoken) • Command Support Relationships • Digital Information Systems Familiarization • Military Terms and Graphics • Overview of Command Theory and Staff Processes **Module 2: Major Combat Ops (MCO)** • Contemporary Operating Environment (COE) • Offensive Operations (Ops) and Fire Support Considerations • Defensive Ops and Fire Support Considerations • Joint Fires • Sustainment Ops • Staff Ride: Pea Ridge, Arkansas	**Module 3: Process of Processes** • Intelligence Preparation of the Battlefield • Military Decision Making Process (MDMP) • Targeting • Task Force Fire Support Planning • Fires Battalion (Bn) Ops Planning **Module 4: Ops Order Practical Exercises (PEs)** • Bn-level Offensive and Defensive MDMP PEs **Module 5: Stability Ops** • Tactical Information Ops (Fort Sill Resident Course) • Counterinsurgency (COIN) Ops (Brigade and below) • Bn-level Targeting in COE • Media Training/PE • Leader Engagement Training/PE	**Module 1: MCO** • FA Equipment Familiarization • Special Munitions (Excaliber, Guided Multiple-Launch Rocket System) • Troop Leading Procedures • FA Btry Ops Planning **Module 2: COIN Ops** • Btry-level COIN Planning and Execution **Module 3: Training Management, Administration & Logistics** • Uniform Code of Military Justice • Leadership Development • Btry Supply Ops • Btry Maintenance Ops • Personnel Administration

Figure 1: Current Field Artillery Captain's Career Course (FACCC) Overview (20 Weeks)

FACCC class 6-07 conducts an intelligence preparation of the battlefield practical exercise. (Photo by Captain Claude Legendre, Canadian Army, Small Group Instructor, FACCC)

COIN (and stability operations in general) is another part of the POI redesigned based on students' experience levels. The old POI focused on ensuring our FA captains understood the tactics, techniques and procedures (TTPs) of planning and executing cordon and searches, convoy security, counter-improvised explosive device operations and other similar operations. Although all of these TTPs are important, most FACCC students already have learned those TTPs through on-the-job training. To prepare students to be battalion staff officers and battery commanders in a COIN environment, new instruction and several practical exercises were added. This forces the students to understand their operational environment better and gives them the skills to create long range plans nested with their higher headquarters' intent.

The new instruction and practical exercises are consistent with *FM 3-24*, introducing skills such as socio-cultural analysis, social-network analysis, battalion long-range planning and foreign media interviews. Also, the school improved instruction on retained topics including pattern analysis, leader engagements, battalion and company raids, cultural awareness and battalion targeting in a COIN environment.

Command and Control. Based on the new *FM 3-0*, the school created a new stand-alone module in the POI that deals directly with command and control. In it, battle command theory is introduced and linked to the staff processes. Also in this module, the elements of combat power, the concept of mission command, understanding full-spectrum operations and the structure of modular BCTs and other brigades are introduced.

Adding these new doctrinal concepts to previously taught command and control subjects (such as command and support relationships, terms and graphics, introduction to digital systems and effective communications) is intended to create a common language and understanding of Army operations. This serves as a foundation and context for students to apply to more complex tasks later in the course—such as developing a long-range plan based on higher headquarters' campaign plans or planning simultaneous lethal and nonlethal fires.

Nonlethal Fires. The new *FM 3-0* clearly defines the new fires warfighting function as "…the related tasks and systems that provide collective and coordinated use of Army indirect fires, joint fires and command and control warfare, including *nonlethal fires.*" In the old POI, there wasn't a block of instruction that thoroughly taught students how to coordinate nonlethal fires.

Now, the Fort Sill resident Tactical Information Operations Course (TIOC) is embedded into the FACCC course and, upon successful completion of this block, students are awarded the associated tactical IO additional skill identifier "P4." The TIOC is placed just before the Stability/COIN Operations module, which prepares students to integrate nonlethal fires successfully into the many practical exercises. Initial feedback from classes 2-08 and 3-08 indicate that embedding the TIOC is a huge success and better prepares captains for returning to the force.

COIN Theory, Planning and Application. The school assessed the COIN operations classes and adjusted them to reflect the doctrine accurately from *FM 3-24,* which was released December 2006. This change further ensures that future battalion staff officers and battery commanders operating in a COIN environment are well versed in a common doctrinal COIN theory, planning and application.

Practical Exercises. There was a final area of the FACCC POI that needed updating based on new doctrine and emerging technologies. Several practical exercises were outdated in regards to force structure (modularity BCTs) and the use of special munitions including Copperhead versus Excalibur/Guided Multiple-Launch Rocket Systems (GMLRS) and the use of Lightweight Countermortar Radars and Unmanned Aircraft Systems. Instructors spent several weeks creating, reinventing or updating many practical exercises and tests so that students use more realistic scenarios.

The Way Ahead. Working closely with fires doctrine developers, the school leaders understand that the new *FM 3-0* is creating several changes to fires doctrine and is reassessing the FACCC POI against these developing changes. With increased emphasis on mission command, these leaders are working with the National Training Center in Fort Irwin, California; the Joint Readiness Training Center in

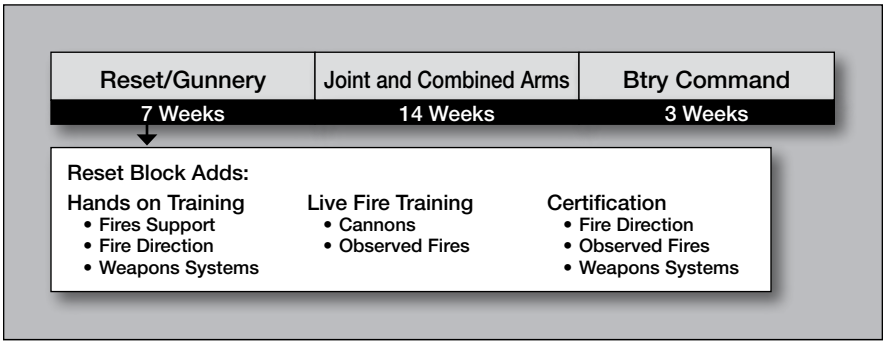


Figure 2: Expanded FACCC (24 Weeks) with Additions to Rebuild Conventional Skills

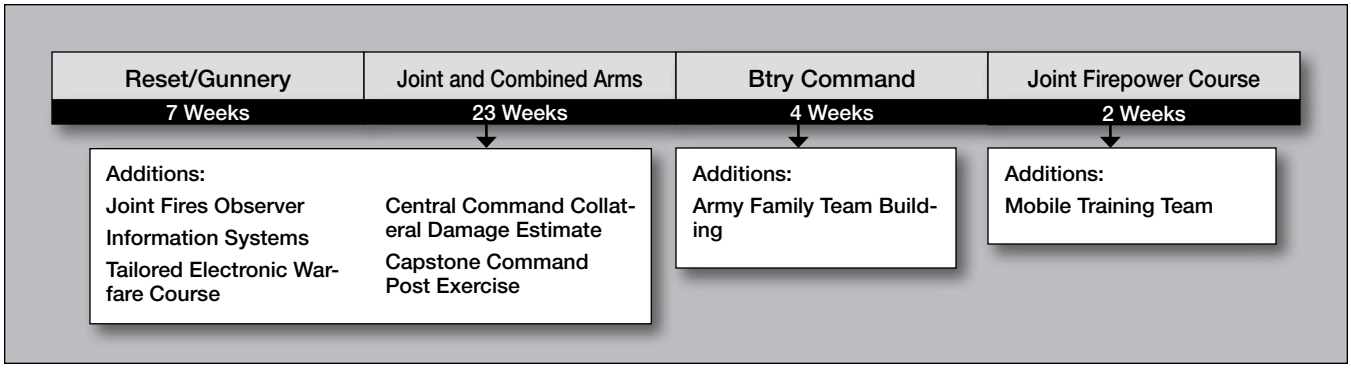


Figure 3: Proposed FACCC (36 Weeks) with Additions to Sustain and Regain Competencies and Train New Fires Tasks

Fort Polk, Louisiana; and fires doctrine developers to create solutions for necessary changes to fires planning methods at the brigade, battalion and company levels. In addition, the school is monitoring the development of the new *FM 3-09* closely to ensure that, once it is published, the FACCC POI will be ready with the most current doctrinal concepts.

Upcoming Redesign. There are several additions in the new FACCC POI, but there is one thing the school could not add—*time*. Currently, several POI blocks do not get past the "familiarization" level of instruction. This is true especially in regards to resetting our FA captains with their core competencies—the most pressing concern being lethal skills atrophy. MG Vangjel's solutions, proposed at the Fires Seminar, to address the atrophy are to expand the FACCC in two distinct phases. The first phase, expanding the class length from 20 to 24 weeks has been approved by the Training and Doctrine Command (TRADOC).

24-Week Class. The first phase is to extend the course from the current 20 weeks to 24 weeks is shown in Figure 2. The additional four weeks will allow the school to immerse students thoroughly in practical applications to develop the skills required to become experts at coordinating lethal fires at the battalion level and delivering fires at the battery level. Specifically, graduates would be competent at all tasks required of Soldiers and leaders in the fire support, delivery section and fire direction center tables outlined in the *FM 3-09.8 Field Artillery Gunnery*. This would provide units with a fires expert (FACCC graduate) who is prepared to plan and execute FA core competency training while serving on a battalion staff or as a battery commander.

36-Week Course. In the second phase, proposed by the general, the school potentially could extend the course to 36 weeks (see Figure 3).

According to the new *FM 3.0's* definition of fires warfighting function, it requires fire supporters to coordinate the "…use of Army indirect fires, joint fires and command and control warfare, including nonlethal fires, through the targeting process." The current 20-week and the soon-to-be 24-week POIs do not provide the required time to ensure that captains know the capabilities of these types of fires and their effects nor know how to coordinate them.

So, the intent of this expansion is to embed outside courses into the FACCC POI that would ensure captains go to their gaining units with the required credentials to coordinate all of these fires.

Potential embedded courses in a 36-week expanded POI may include the Joint Fires Observer course, the six-week Electronic Warfare Course and Central Command Collateral Damage Estimate Certification as well as other blocks of instruction.

Lessons Learned from Initial Feedback. One of the greatest lessons learned from the 2006 redesign is that the school must maintain an adaptive POI that is scrutinized constantly and updated as necessary. Instructors owe this to the students and to the force.

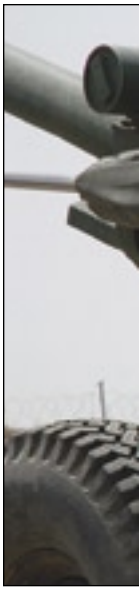
Based on the current redesign, there are several lessons learned during class 2-08—the pilot course. The school took these lessons and made minor adjustments to the POI, starting with class 3-08. Some of these changes include adding more time for practical exercises in fire support and fires battalion planning; adding special munitions instruction like Excalibur and GMLRS; and continually improving the many quizzes, tests and practical exercises. The school will continue to assess and adapt the POI based on lessons learned, emerging doctrine and changes to current operations around the globe.

Any feedback, questions or suggestions about the current or future FACCC POI designs are welcome. To do so, contact Major Sittenauer by email at peter.sittenauer@us.army.mil or Major Morgan at neil.morgan@us.army.mil.

Major Peter M. Sittenauer, Field Artillery (FA), is a Class Team Leader/Scheduler and Small Group Instructor in the FA Captain's Career Course (FACCC) at Fort Sill, Oklahoma. Previously he served as an Observer/Controller at the Joint Readiness Training Center (JRTC) at Fort Polk, Louisiana. He was the Division Artillery Fire Control Officer and Commander of B Battery, 1st Battalion, 94th FA (B/1-94 FA) in the 1st Armored Division, stationed in Germany, deploying to Operation Iraqi Freedom (OIF) I and II. While assigned to the 101st Airborne Division at Fort Campbell, Kentucky, he served as a Company Fire Support Officer (FSO), Battery Fire Direction Officer (FDO) and Battery Executive Officer, deploying with Task Force 2-327 Infantry to Kosovo. He holds a master's in Administration from Central Michigan University in Mount Pleasant.

Major Cornelius L. Morgan, FA, is the Senior Instructor and Battery Commander at the FACCC. He served as an Observer/Controller at the National Training Center, Fort Irwin, California. Previously, he was the Battalion FDO, Assistant Battalion S3 for 4-27 FA in Baumholder, Germany, with duties as 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 FSO and Battalion Targeting Officer the 2-82 FA, 1st Cavalry Division, Fort Hood, Texas. He holds a master's degree in Management and Leadership from Webster University at St. Louis, Missouri.

The authors would like thank Major James N. Hickman, former FACCC senior instructor, who orchestrated the major POI redesign implemented in 2008 and, also, the following instructors who played significant roles in the redesign: Majors Dudley C. Brownell, Jason Hicks, Charles E. Krieger, Blake W. Keil and Justin M. Collins (Australian instructor).



NCOES —Restoring NCO Core Competency

The brigade commander received intelligence from a Shadow Unmanned Aerial Vehicle that the Krasnovian 351st Artillery Group was emplacing and preparing to fire. The brigade fire support coordinator sent the movement order and a "when ready" fire mission to the fires battalion. Forty-minutes later the brigade tactical operations center was hit with a massive enemy artillery barrage.

The Q-37 Radar reported the incoming acquisition; however, the fires battalion still was not emplaced and laid to fire, and howitzer crews were too slow in laying their artillery pieces. The fire direction center had difficulty initializing the Advanced Field Artillery (FA) Tactical Data System and was slow at rectifying the problem, and the forward observers weren't ready to observe and had trouble setting up their new observation equipment.

By CSM Dean J. Keveles, FA

If the FA Branch continues along the same path it has been moving since the War on Terrorism began, this is not an unlikely future scenario for our Army in a high-intensity conflict. And this unsettling scenario is not limited to future major combat operations—it could happen on today's battlefield in the counterinsurgency (COIN) fight where timely and accurate fires are just as important. The reason behind this disturbing trend is the numerous nonstandard missions that have caused a critical atrophy in core competencies.

Observations. This trend has been noticed by many. Among others, it has been observed by senior fires support observer/controllers at the combined arms training centers (CTCs), acknowledged by the Army leadership and mentioned by NCO Academy students during after-action reviews, surveys and critiques.

CTC Trends. Current CTC trends—based on observations by CTC fires support observer/controllers from Wolf Team at the National Training Center, Fort Irwin, California; Fox Team at the Joint Readiness Training Center, Fort Polk, Louisiana; and Vampire Team at the Joint Multinational Readiness Center in Hohenfels, Germany—indicate that almost all Artillery units have major problems with basic skills because they have not had the training and experience needed for their level of responsibility in those core skills.[1] The figure lists just a few of the CTCs' reported observations and trends.

Army Leadership. General Richard A. Cody, Vice Chief of Staff of the Army, testifying before the US Senate Armed Services Committee on 31 March, said, "[Soldiers] are training solely for counterinsurgency operations and focusing on the mission of the brigade they're replacing in either Iraq or Afghanistan, and they're not training to full spectrum for other operations."

NCO Academy Students. US Army NCO Academy, Fort Sill, Oklahoma, students attending the NCO Education System (NCOES) courses tell us that they are not confident in their core competencies due to the number of nonstandard deployments. Additional comments indicate that, the current courses sustain skills, but do not allow for rebuilding or competence.

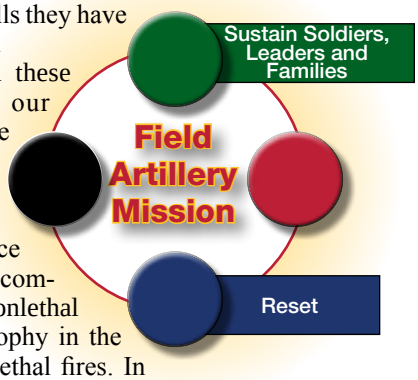
Quality Assurance Office's pre- and post-course surveys conducted with the student population attending the NCO Academy have validated these observations—that there is a significant number of students who feel they can perform a critical task, but only with the help of another leader or a graphic training aid. In addition, many of the NCO Academy instructors regularly report that their students lack knowledge and core competency skills.

Atrophy Results. Because of the nature and operations tempo (OPTEMPO) of the current fight, the FA cannot depend on the three pillars of training (self-development, institutional training and operational assignments) to develop our Soldiers and leaders. Unless operational requirements decrease, the generating force and institutional training must be the center of core competency maintenance and sustainment.[2]

The Army is beginning to see a generation of NCOs who have lost core skills and cannot teach those skills to their subordinates who will replace them one day. One of the most basic, critical NCO duties is to develop and train individual Soldier skills and crew drills to support the collective training efforts of our officers.

The modularity design of the brigade combat teams took the fire supporters out of the fires battalions and placed them into direct assignments within the combined arms battalions. This reduced the senior FA leaders' oversight of training and skill sustainment contributing to increased degradation in the MOS 13F Fire Support Specialist skill sets and systems maintenance.

In support of maneuver commanders, section chiefs perform platoon sergeant duties, and platoon sergeants perform first sergeant duties, finding themselves working autonomously on separate forward operating bases. In addition, commanders are reforming their tactical operations centers and staff sections to meet mission needs and the nature of the battlespace. Therefore they are pulling NCOs "out of hide" to create positions required, but are not on their modified tables of organization and equipment. This places NCOs into a larger learning curve for skills they have not acquired.



Despite all these challenges, our NCOs are performing magnificently in the fight, but the balance is shifting to competence in nonlethal fires and atrophy in the delivery of lethal fires. In addition to nonstandard missions contributing to the degradation and atrophy of FA skills, the introduction of new systems relying on greater technology adds even more skills that NCOs need to learn or relearn.

Most Basic NCO Course (BNCOC) and Advanced NCO Course (ANCOC) programs of instruction (POI), have an introduction to these newly acquired, technologically-enhanced systems, allowing NCOs to gain familiarity with the new systems. But a longer course is needed to allow students to understand the systems' capabilities and limitations, while those already familiar with the systems realize those skills are perishable with time and reset will be needed.

SGT Kevin A. Hoople (Left) and SPC Leland J. Marshall, of 1st Battalion, 320th Field Artillery, stand ready at their M119A2 105-mm howitzer for the command to fire after a counterfire was called 25 April, in Mahmahdiyah, Iraq. (Photo by SPC Kelly K. McDowell, 2nd Brigade Combat Team, 101st Airborne Division)

The Army Force Generation (ARFORGEN) cycle, OPTEMPO, and the contemporary operating environment have reduced the time available for the self-development and operational "pillars," thus placing a greater burden on the institutional pillar. To ensure proficiency to mitigate mission failure or, worse, fratricide, more time and resources need to be allocated to the institutional pillar (NCOES and functional courses) to "keep the roof over" the foundation of MOS skill sets.

Some Solutions. NCOES courses need to be expanded. In support of Chief of FA Major General Peter M. Vangjel's FA Campaign Plan, leaders from both the Fort Sill NCO Academy and the FA Directorate of Training and Doctrine (DOTD) have submitted a concept plan. On 10 July, the plan was approved verbally by General William S. Wallace, Commander of Training and Doctrine Command (TRADOC), and allows for an expansion of the FA NCOES courses to reset core competencies, increase skill proficiency and incorporate additional training to address current and emerging core-competency requirements.

Depending upon which one of the eight FA MOS is being discussed, the course is projected to expand from one to three weeks. Expansion is most critical in MOS 13B FA Cannon Platoon Sergeant, 13D FA Tactical Data Systems Specialist and 13F Senior Fire Support Sergeant for ANCOC and in MOS 13B FA Cannon Section Chief and 13F Fire Support Sergeant for BNCOC. The concept plan calls for an increase in the time spent on some critical tasks and the addition of other critical tasks currently not taught in their respective courses—all to regain core competencies for our Redleg NCOs. The NCOES courses' expansion will drive more for mastery of skills vice familiarization and restating learned skills.

Each NCOES course needs additional time to build critical thinking and adaptive, flexible leadership skills. Appropriate core-skill growth is provided in the future POI for conversion from 13S FA Surveyor and 13W Meteorological Specialist to the merged MOS of 13T FA Surveyor/Meteorological Crewmember, that begins instruction first quarter, fiscal year 2010.

Unit commanders also can help their units and their NCOs by sending them to the functional courses that would enhance their skills and bring needed capabilities back to their units. Such examples are the Battle Staff NCO, Fire Support Coordinator, Master Gunner and Joint Fires Observer Courses.

- **Entire sensor-to-shooter chain is broken—fires battalions appear unable to fix the forward observer problems.**
- **Most cannon platoons would have fired "out of safe" if not prevented by observer/controllers, and there are firing incidents during every rotation.**
- **Crew drills are very slow and any type of friction halts operations.**
- **Field Artillery units are beyond the point they can retrain themselves without external assistance.**
- **Ninety percent of available fire supporters are uncertified and serving outside their MOS.**

Combat Arms Training Centers' Observations of Field Artillery Units

With more than 75 percent of 13-series NCOs having not fired their primary weapons system for more than two years, the TRADOC-directed future NCOES conversion from BNCOC to the Advanced Leader Course (ALC), and from ANCOC and the Senior Leader Course (SLC) will allow NCOs to tarin a level up and gain new skills. This conversion will allow the FA Branch to focus on critical technical tasks, allowing our branch to return to its core competencies. It also will embed first sergeant course tasks into the ANCOC (to become SLC) courses to create a more versatile NCO corps. This conversion to ALC/SLC will become a part of the total rebuild.

The NCO Academy Cadre and DOTD continuously assess course material and structure. With the TRADOC commander's approval, the proposed concept plan for restoring NCO competency in core skills will be implemented as soon as possible and meet the Chief of the Field Artillery, Campaign Plan "Reset" and "Sustain Soldiers, Leaders and Families" lines of effort with greater success. Second and third order effects of success will assuredly be felt in the "Win in the Current Fight" and "Transform for Future Operations" Lines of Effort.

It is never too high a price to pay to provide the standards, resources and time for the institutional NCO courses that support the best NCO Corps in the world. We cannot afford to fail the NCOs that lead our Soldiers. If our Soldiers become casualties on today's or tomorrow's battlefields, *that* is too high a price to pay.

Endnotes:
1. Combat Training Center Field Artillery Fire and Maneuver in Counterinsurgency Pre-Command Course Briefing.
2. Information Paper by Brigadier General Richard C. Longo, 19 November 2007.

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 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.

MiTT—An ADA and FA Challenge

By CPT Jonathan C. Schmidt, FA; and CPT Shawn H. Geib
and CPT Chunka A. Smith, both ADA

The Army is in a state of transition, and the Field Artillery (FA) and Air Defense Artillery (ADA) branches have a big role to play in that transition. Both branches are working to accomplish and support three major efforts—winning the War on Terrorism, transforming our unit organizations to support the Army's modularity and force modernization effort and adjusting to the challenges of the Base Realignment and Closure effort. Both branches also must continue supporting Forces Command and Training and Doctrine Command mission requirements in addition to the newest shared requirement—transition teams.

As part of this shared requirement, ADA and FA are working together to ensure success for ADA officers deploying as fire/effects officers (i.e. fire support officers or FSOs) on transition teams.

Full-Spectrum Operations. Transition teams (to include military, border, national police and police transition teams; embedded training teams, operation mentor liaison teams, and other specialty transitional teams) are part of the Army's full-spectrum operational concept, as outlined in *Field Manual (FM) 3-0 Operations*.

"Army forces combine offensive, defensive, stability or civil support operations simultaneously as part of an interdependent joint force to seize, retain and exploit the initiative, accepting prudent risk to create opportunities to achieve decisive results. They employ synchronized action—lethal and nonlethal—proportional to the mission and informed by a thorough understanding of the operational environment's variables. Mission command that conveys intent and an appreciation of all aspects of the situation guides the adaptive use of Army forces."

Within this paradigm, the Army conducts high-intensity conflict (HIC) operations, both offensive and defensive, stability operations and civil support operations

(see Figure 1, Page 24). Transition teams are unique in that their missions and objectives crisscross throughout all of the Army's operational missions.

The unique nature of the transition team mission requires individuals who are competent, confident and agile—the same requisite skills discussed in *FM 6-22 Army Leadership*. The introduction to this manual sums up exactly what is required for Army leaders.

"It is critical that Army leaders be agile, multiskilled *pentathletes* who have strong moral character, broad knowledge and keen intellect. They must display these attributes and leader competencies bound by the concept of the Warrior Ethos. … Army leaders must set the example, teach and mentor."

The back-and-forth shifts from HIC to stability operations to civil support operations have developed a flexible Army that can make these operational transitions with relative ease. The training methodology that focuses on developing competent, confident and agile leaders has made it possible to operate successfully across the full-spectrum operational battlefield.

As a result, the Army is developing an officer corps that is no longer primarily focused on HIC operations. Rather, Army officers have become "plug-and-play" leaders, able to execute a myriad of tasks whatever duty position they are assigned. So, every Army officer can operate successfully on a transition team.

Supporting Transition Teams. Supporting transition teams is not new to FA. In fact, FA is required to fill 120 hard-coded fires/effects officer positions each year. The burden of filling these positions has fallen primarily to FA captains attending the FA Captain's Career Course (FACCC). Historically, 29 percent of FACCC graduates has had a transition team as a follow-on assignment—though the actual number of FA captains who have served on a transition team is much higher because many have had a transition team deployment before attending the FACCC.

Although this trend is not the primary cause of the large exodus of company grade FA officers—13.7 percent in fiscal year 2007, which would have approached almost 18 percent if not for the stop/loss orders supporting the surge effort—it has certainly played a role in the overall health and ability to execute common core tasks within the FA.

In addition to the transition team requirements, which must be filled to 100 percent, the FA must meet its other branch requirements with a decreasing population of company grade officers. The FA Branch Chief states in a letter to the field that, "[I]ncreased company grade attrition [has] contributed to a growing imbalance between the number of captains in the force and the number of authorizations as we grow structure … the Army's manning guidance is to fill deployers first (both operational units and transition teams) and then to balance, as best we can, other units across the Army. … We are at the point where, in some instances, we may no longer be able to meet that standard."

Without some relief, FA simply will not be able to continue meeting these multiple-mission requirements. Enter the competent, confident and agile leadership of the ADA officer corps and its willingness take on the challenge of deploying as transition team fires/effects officers.

Training the ADA officers to execute the FA tasks (i.e. call for fire, close air support or CAS, and close combat attack or CCA) and missions (i.e. company and battalion level fire support operations) fell to the Basic Fire Support Branch in the FA School where a transitional course was developed.

CPT Mark A. Hamstra, from the 11th Air Defense Artillery Brigade and assigned to the Fort Riley transition teams, observes his smoke placement during the Fires/Effects Transition Team Course three-day live fire exercise on Fort Sill, Oklahoma, 25 June. (Photo by CPT Jonathan C. Schmidt, A Battery, 1st Battalion, 30th Field Artillery)

Fires/Effects Transition Team Course. The Fires/Effects Transition Team Course (FET-TC) is an enabling course that provides an ADA officer with the minimum necessary skills required to operate as a FSO. Initially, the skills included all of the requisite tasks that FA lieutenants and captains receive in their officer training courses. This skill list was vetted against the experiences of recently returned FA transition team veterans as well as the Fort Riley Transition Team Fires Committee.

The final course objectives are to ensure the students are proficient in target location and call for fire methods; knowledgeable of planning and coordinating joint close air support employment for both fixed- and rotary-winged assets; and knowledgeable of the fire support products and the Decide, Detect, Deliver and Assess (D^3A) process used for contemporary company and battalion tactical operations and urban scenarios. These objectives are the foundation of the course critical task list (Figure 2).

Taking into consideration critical tasks from the ADA Basic Course, the ADA CCC and the Fort Riley Transition Team Training Course, the FA School designed the critical task list and focused on the tasks specific for operating successfully as a knowledgeable fires/effects officer. The approved course structure consisted of a combination of practical exercises, simulations and field training with the minimum amount possible devoted to classroom instruction. The end result was a course where only 18 of 136 total training hours were in a traditional classroom environment.

Call for Fire, CCA and CAS. The FET-TC successfully used practical and simulation exercises in addition to a live-fire culmination event to achieve call-for-fire proficiency and knowledge of CCA and CAS. The students spent three days in the Call for Fire Trainer and worked through increasingly more difficult and detailed scenarios that built upon their newly learned skills acquired through constant drilling—in essence, the call for fire became a battle drill. The students applied these drills to new situations and missions via a distributed learning center known as the Joint Fires and Effects Training Simulator (JFETS).

Students received two days of rotary-wing CCA and fixed-wing CAS instruction in the JFETS facility. On the first day, the student to instructor ratio was three to two. This enabled the students to move through exercises quickly and receive personal and immediate feedback from a joint tactical air controller (JTAC) and an Air Force pilot. The students achieved familiarity with CCA and CAS after this first day of instruction.

The second day consisted of similar, though progressively more difficult, urban and open terrain simulations, culminating in a networked exercise where the students freely applied their new skills using combinations of call for fire, CCA and CAS missions. This final day of training gave the students the knowledge level required to meet the course objectives.

Finally, at the live-fire culmination exercise, ADA students trained alongside FA Basic Officer Leadership Course (BOLC) III students for three days, calling for fire from a static observation post. During these three days, each Air Defender called for fire using multiple munitions, including high explosive, M825 smoke, white phosphorous smoke and illumination. The average mission count, during this time, for each ADA student was 10.

Additionally, on the first and third day of the live-fire exercise, students worked with JTACs and Air Force F-16s on CAS nine-line procedures as well as target-talk-on tactics, techniques and procedures. Thus, after 10 days of call-for-fire training, ADA officers had the same target engagement skills as company-level FSOs.

Fire Support Planning. Team-based planning was introduced by means of role playing FSOs in task force HIC scenarios. Students learned the roles and responsibilities of a fire supporter, becoming proficient with fire support products and knowledgeable about the D^3A process.

The students worked through a series of battalion-level operations order (OPORD) exercises, learning the three products of a company-level fire plan: fire support overlay, target list worksheet and the fire support execution matrix. After three battalion OPORDs, the students were proficient in developing these products.

Because many Iraqi and Afghan units require Coalition support for their operations, proficiency with these products enables fires/effects officers to translate their transition team counterparts' fires concept into a commonly understood format for execution by Coalition units assigned to support those missions.

The second goal for this objective was to know and understand the D^3A process. To achieve this goal, students were introduced to a brigade-level OPORD and guided through a fire support battalion military decision-making process HIC exercise. They were assigned one of three roles (S2, S3 or FSO) in a heavy brigade combat team. Deliverables included the mobility and combined obstacles overlay derived from the intelligence preparation of the battlefield (IPB) process, target list worksheet, fire support execution matrix, fire paragraph and attack guidance matrix derived from the high-payoff and high-value target lists. Through development of these products, students learned that the D^3A process is continuous and only successful through the combined efforts of the S2, S3 and FSO.

The fire planning portion culminated in an urban IPB exercise where the deliverables were meeting engagement packages for individuals and targeting packages for systems. Students used a combination of civil affairs and information operations tools and the D^3A targeting process to develop the required products.

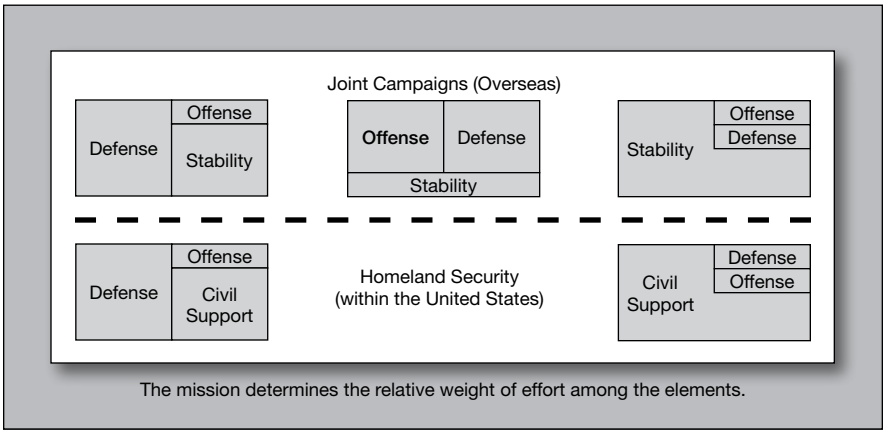


Figure 1: Full Spectrum Operations—The Army's Operational Concept

It can be argued that the ADA students should focus more on urban exercises instead of HIC operations because they will be fighting a low-intensity insurgency in primarily an urban environment. However, the common theme between HIC and low-intensity conflicts is targeting. Whether one focuses on targeting the armor assets in a force-on-force fight or targeting the economic center of gravity in a more populous area, the D^3A targeting process applies across the full spectrum of operations. Students walked away knowledgeable about its application.

FET-TC Instruction. The FET-TC instruction is first-rate. The student to instructor ratio allows for immediate feedback of students' performance by experienced Army and Air Force mentors. The student to instructor ratio directly contributes to the effectiveness and efficiency with which the course is conducted. Tasks and deliverables are based on standard schoolhouse practices and taught by professional, experienced instructors.

What sets this course apart is the flexibility to adjust training based on its perpetual daily after-action reviews (AARs). The instructors constantly assess the students understanding of the materials covered. During the pilot course, the FET-TC instructors made several "in-stride" changes that enhanced the training and learning environment. For example, originally there was only one day scheduled in the JFETS facility. After that first day, the AAR concluded that students were only *familiar* with CAS and CCA. The instructors quickly made an adjustment and scheduled another day in the JFETS facility during which students achieved the "knowledgeable" objective (Figure 2).

The instructors also balance available resources and time. There is a large amount of information to teach and learn. Read-ahead packets are produced for each class so more time can be spent with hands-on training. Additionally, homework packages reinforce classroom instruction and ensure that students achieve the critical task list objectives. The course leadership also coordinates with units on Fort Sill to host two forums with officers who have been deployed as fires/effects officers on transition teams.

After three weeks of training in the pilot course, all learning objectives were met, and some were exceeded. All ADA officers walked away proficient in target location and call-for-fire methods, knowledgeable about planning and coordinating joint CCA and CAS, and knowledgeable on fire support products and the D^3A process. Moreover, they took away with a better appreciation of the intricacies of the tactical fight.

Proficient in:
- locating a target by polar plot.
- locating a target by grid coordinates.
- call for fire.
- adjust fire mission.
- fire for effect mission.
- conducting danger close fire mission.
- conducting an immediate suppression/immediate smoke mission.
- conducting an illumination mission.
- preparing a target list worksheet.
- preparing a fire support overlay.
- preparing a fire support execution matrix.

Familiar with:
- coordinating a close air support (CAS) request.

Knowledgeable:
- in conducting a close combat attack call for fire.
- in directing a CAS mission in the absence of a certified controller.
- in conducting fire support military decision making process.
- in developing a fire plan to support a defensive operation.
- in developing a fire plan to support an offensive operation.

Figure 2: Fires/Effects Transition Team Course Critical Task List

FET-TC Future. Continuing to focus on the commonalities between ADA and FA is what will ensure future success for this course. With the pending merger of both branches' schools into the Fires Center of Excellence, at Fort Sill, Oklahoma, it is imperative that we embrace the commonality of our missions vice the differences. By focusing on developing competent, confident and agile leaders, our joint roles in the current force and the future Army will continue to grow. Sharing the transition team burden with ADA is beneficial for the FA because it partially relieves a costly burden in both resources and manpower.

Likewise, the FET-TC and its tactical focus are beneficial for developing a more flexible and tactically skilled ADA officer and expanding ADA's role in the War on Terrorism. For the Army, the FET-TC will increase the pool of skilled officers from which to draw fires/effects officers. It is important to realize that the FET-TC is not a merger of duties for the FA and ADA branches. Rather, it is an expansion of joint leadership, enabling a greater chance of mission accomplishment within the Army's operational concept—full-spectrum operations.

Captain Jonathan C. Schmidt, Field Artillery (FA), is the Course Administrator for the Fires/Effects Transition Team Course as well as a Fire Support Instructor for FA Basic Officer Leader Course III at Fort Sill, Oklahoma. He has served as an Observer Controller/Trainer with the 87th Training Support Division in Birmingham, Alabama; a Fire Support Officer with the 3rd Battalion, 75th (3-75) Ranger Regiment, deploying once in support of Operation Iraqi Freedom (OIF) and twice in support of Operation Enduring Freedom; and as a Fire Direction Officer and Combat Observation Lasing Team Platoon Leader for the 1-7 FA, Schweinfurt, Germany, deploying to Kosovo in support of Operation Joint Guardian.

Captain Shawn H. Geib, Air Defense Artillery (ADA), is scheduled to deploy as a Military Transition Team (MiTT) Fires/Effects Officer. He currently serves as the Operations Officer for 100th Missile Defense Brigade, Space and Missile Defense Command (SMDC), Colorado Springs, Colorado. He served as a Battery Commander for 2-44 ADA, 101st Airborne Division, Fort Campbell, Kentucky, deploying in support of OIF and as S4 for 2-44 ADA; Battery Executive Officer, 4-3 ADA, 1st Infantry Division, Germany, deploying to Kosovo in support of Operation Joint Guardian; and Platoon Leader and 1-4 Cavalry Air Defense Officer, for 4-3 ADA. He has a Master of Arts in Management and Leadership from Webster University, St. Louis, Missouri.

Captain Chunka A. Smith, ADA, is scheduled to deploy as a MiTT Fires/Effects Officer. Currently he is the Commander of F Company, 1-13 Infantry Regiment (F/1-13 IN), Fort Jackson, South Carolina. He has served as the Executive Officer and Launcher Platoon Leader for E/5-7 ADA in Hanau, Germany; and as the Day Battle Captain for Task Force 1-4 ADA Regiment, Baghdad, Iraq. He holds a master's degree in Leadership Studies from the University of Texas at El Paso.

The authors would like to acknowledge and thank Colonels Kevin M. Batule and Donald H. Myers for their mentorship during the first Fires/Effects Transition Team Course and LTC Christopher P. Talcott for his guidance with this article.

Reset After Multiple In-Lieu-of Missions

By LTC Geoffrey P. Buhlig, FA

Soldiers of C Battery, 1st Battalion, 14th Fires, 214th Fires Brigade, conduct certification tests to qualify on the High-Mobility Artillery Rocket System (HIMARS) on 30 May at Fort Sill, Oklahoma. (Photo by Jerry Bryza Jr.)

Executing four distinctly different battalion missions in three and one-half years is not considered unreasonable in today's dynamic environment while supporting the War on Terrorism (WOT). For more than three years, the Soldiers of the 1st Battalion, 14th Field Artillery (1-14 FA) (High-Mobility Artillery Rocket System or HIMARS) continually have been engaged in support of combat operations in two theaters—Afghanistan and Iraq. The battalion, assigned to the 214th Fires Brigade at Fort Sill, Oklahoma, provided transportation units and target acquisition (TA) batteries to in-theater maneuver commanders to support their missions.

Until March through June—when the battalion's total package fielding, new equipment training (NET) and live-fire HIMARS qualification occurred—the last time the battalion fired a launcher was in December 2005 when C Battery completed Artillery Table VIII. The last live-fire exercise for the other two battalion firing units occurred December 2004 through January 2005.

Resetting an Artillery battalion deployed as an intact unit for 12-15 months is a challenge. Resetting a battalion with multiple deploying subordinate units—on differing timelines and for a period of more than three years—presents additional challenges. Many of these challenges are unique to units, like 1-14 FA, that are not included in the Army Force Generation (ARFORGEN) model.

This article provides an overview of the 1-14 FA's Reset plan, outlines the most significant Reset challenges that the unit faced and provides viable solutions for these challenges for future use by other units.

Reset Plan. Much of the strategy for 1-14 FA's Reset Plan was developed over time and is a compilation of lessons learned from units that returned from other in-lieu-of missions.

Redeployment Day or R-Day. R-Day began the Reset process. R-Day to R+90 focused on equipment handoff between the rear detachment NCO-in-charge (NCOIC) and the commander. An essential task was updating property books and returning the responsibility of property accountability to the commander. In most cases, a battery change of command occurred, facilitating the handover of property accountability.

Reestablishing unit systems was a secondary task. Systems included all functional areas of the organization—training, maintenance, supply, reenlistment and others—and each had to be addressed at both the battery and battalion levels.

A tertiary, but important, task was managing personnel actions and ensuring Soldiers—single and married—reintegrated into life at home. This particular task was a part of every phase of the Reset process.

R+91. The second phase of Reset began at R+91 and continued until about R+165, when the battalion focused its time and resources into retraining the individual Soldier. Units conducted driver's training in preparation for fielding a wheeled-based fleet of equipment. Units also completed combat-lifesaver training, executed individual and crew-served weapons qualifications and conducted many Army Regulation 350-1 Training and Education annual training requirements.

Several iterations of "refresher training" were conducted for Military Occupational Specialties (MOS) 13M Multiple-Launch Rocket System (MLRS) Crewmembers and 13P MLRS Automated Data Systems Specialists, capitalizing on the battalion's proximity to the FA School. Each 13M and 13P Soldier received two weeks of hands-on training on his respective system—the Advanced Field Artillery Tactical Data System or the Fire Control Panel—and the launcher itself. The feedback from the Soldiers after this phase was that they felt confident in their abilities to move into section training and begin fielding the HIMARS.

R+166. Between R+166 and R+270, the plan called for section-level training, dry-fire certification and live-fire qualification. For 1-14 FA, the fielding and NET occurred during this phase of Reset. The program of instruction (POI) "by-the-numbers" approach provided by the fielding team allowed each unit to train methodically and at "about the right pace" for the Soldiers' experience levels. Each battery completed two to three weeks of field training culminating with Artillery Table VIII live-fire qualification, completing each firing batteries' NET.

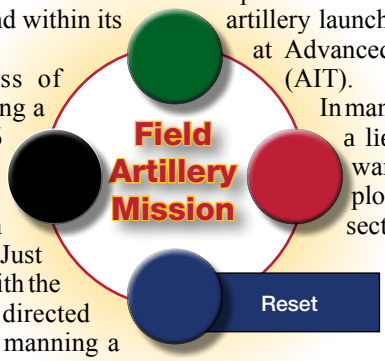
Rounding out the Reset process are a couple of extended timeframe, collective training events executed at battalion level. By R+365, a battalion should be able to complete section, platoon and battery certification and live-fire qualification. Training beyond that—battalion collective training—is dependent on resources available outside the unit. The 1-14 FA demonstrated that 12 months of focused Reset is enough to enable an Artillery battalion to recover from any nonstandard mission.

Four Dominant Themes. Throughout the Reset process, the 1-14 FA's plan had four themes—personnel, training, time and higher headquarters oversight—that were the overall driving forces behind each of the Reset tasks. Both the challenges presented and solutions found follow these themes.

Challenges. Training and readiness oversight (TRO) for a fires battalion is provided by a brigade headquarters. These fires brigades, like 1-14 FA, are being picked apart to fill various theater mission requirements, and units do not have the ability to train or retrain themselves to standard. If the brigade and its organic and assigned units were on the same lifecycle, the Reset/Train/Deploy paradigm would be more successful for all parties.

Although 1-14 FA's unique circumstances presented some challenges, many of these challenges can be seen across the brigade formation and within its sister units.

Personnel. Regardless of the task—whether driving a truck or operating a Q-36 radar system—each in-lieu-of mission required far more people than 1-14 FA had available. Just because a unit deploys with the number required for a directed mission, assuming that manning a battalion during Reset is easy would be wrong.



As Soldiers redeployed and units came "out from under" their 90-day fence, NCOs were reclassified to other MOS, sent to recruiting assignments, became drill instructors or filled other assignments to meet Army needs. Losses outweighed gains; and for a large part of the period—between R+45 to R+165—there was a tremendous amount of concern that the battalion would not be able to field 18 fully manned launcher crews and partially manned battery operation centers.

The battalion learned that assigned strength does not equal available strength. In addition, because the missions were in-lieu-of the battalion's core mission, any MOS Soldier who could learn a task and deploy was suitable. This created a large number of MOS mismatches or excesses across the unit.

Reset occurred from October 2007 to June 2008—1-14 FA's second year of providing TA batteries in Iraq. On the aggregate, the brigade was at or above authorizations because of these missions. But the unit experienced the challenge of rebalancing the formation during Reset—finding that the Army's requirements and the unit's need to reassign Soldiers to fill positions within their assigned MOS outweighed the need to man equipment in preparation for fielding. Despite this challenge, the battalion was able to fully man every launcher and partially man all battery operations centers and all but one platoon operations center.

Another challenge was inexperience in the junior officer and NCO ranks. To meet in-lieu-of mission requirements, many NCOs served as radar system operators, drivers, gunners or truck commanders, personal security detachment members, convoy escort teams or combat logistical patrols. After 18 months of performing nonstandard missions, NCOs found themselves assigned as launcher chiefs despite the fact that their last rocket artillery launcher training took place at Advanced Individual Training (AIT).

In many of our radar sections, a lieutenant rather than a warrant officer was deployed to serve as the radar section leader. Now these lieutenants are being promoted to captain and have little to no battery experience.

These officers' and NCOs' short Army careers have been much more dynamic than many of the more senior battalion leaders, but what they have learned in combat may not translate precisely into commanding a firing battery or leading a HIMARS platoon.

Training. The personnel challenges faced by the battalion during Reset were linked directly to the unit's ability—or inability—to train. Every level of the organization had to "learn to crawl before it could even *think* about walking," but the greater challenge was at battalion level.

Because of the long war being waged, majors to sergeants first class lacked many basic skills of planning, coordinating and controlling the execution of even the simplest tasks. It was alarming to witness an unskilled battalion staff tasked with planning one event while simultaneously executing another. This lack of skills becomes an even greater problem when there are more than two events to plan and execute.

The atrophy of core competency skills goes deeper and spans a much wider area than just individual launcher section or fire direction section functionality, despite the fact that the deployed junior officers and NCOs were highly capable individuals and the standards at which units executed the in-lieu-of missions demonstrated the high level of talent within the ranks.

Attaining higher complexity level operating standards demands more than crew qualifications; it requires a focused training plan that demands personnel stability so junior officers and NCOs can learn, grow together and develop those skills.

Time. During Reset, time management is no less critical than during predeployment training or during combat operations. If training timelines are mismanaged, a Soldier and his family pay the price, and units do not train efficiently or to standard.

Every leader in the battalion faced the challenges of managing the training requirements while allowing Soldiers time to reintegrate with their families or into life back here. Unique to units not included in the ARFORGEN model is that those units, like 1-14 FA, may experience multiple "piecemeal" deployments that follow multiple timelines.

At any one time during the past three years, the battalion experienced units in every stage of Reset/Train/Deploy. In some cases Reset was being conducted at the section level while training was occurring at the battery level or vice versa. Synchronizing timelines to accommodate each unique situation is demanding for a trained staff; factor in inexperience, and this task becomes monumental.

Higher Headquarters Oversight. Our Reset process was affected adversely due to the lack of a higher headquarters because 214th Fires Brigade Headquarters deployed in support of WOT in May 2007. A small brigade staff—that helped in every way it could—remained at Fort Sill, but a colonel and his complete staff to oversee and help the battalion execute the Reset mission clearly was needed.

Although the battalion accomplished its mission here, it was at the expense of losing valuable oversight and assistance.

Solutions. During the 1-14 FA Reset process, the following solutions were incorporated, and some may help other units faced with the same challenges.

A potential solution to shortening the time it takes to Reset and retrain core competency skills is to reduce deployment length for enduring in-lieu-of missions to less than 12 months. Although difficult with regards to deployment equity, it is an option worth exploring in terms of competent skilled Artilleryman.

Personnel. No unit will have 100 percent of its assigned strength by skill set or grade, even if the unit is deploying to combat. Therefore, creatively task organizing personnel within the unit enables it to accomplish the task at hand. It is more than just having an individual "wear two or more hats." Identifying special skill sets or talents that Soldiers and leaders have and then directing them to plan, execute and oversee the execution of key tasks will help the unit accomplish its mission. If a commander uses a "project management" approach to assigning personnel for short term duties, more can be efficiently accomplished.

Finally, assign personnel to critical needs first. Having key billets filled on the battalion staff is one of the keys to a unit's success. Based on our experiences, units need a full time battalion reenlistment NCO, a battalion command financial advisor and a battalion equal opportunity leader—assigning NCOs to serve full time in these positions proved a good move.

The reenlistment NCO focused solely on reenlistment because it is our number one nontactical mission. The command financial advisor offered solutions to Soldiers who did not have a solution for money problems when additional money received during deployment stopped while bills continued to present themselves.

Having an equal opportunity leader was critical as the unit transitioned to a modular fires battalion and the forward support company, with both male and female Soldiers, activated to support the battalion logistically. The smooth transition was attributed to the fact that we had a permanent battalion equal opportunity leader who aggressively approached equal opportunity training.

Other critical personnel assignments included the battalion operations sergeant major, master gunner, fire direction chief, senior maintenance supervisor, S1 and S4 NCOICs. Although primary staff positions are important, these specialty areas require just as much attention during Reset.

Transition for fires brigades is inevitable because they are not included in the ARFORGEN model. Managing that transition requires commanders, command sergeants major and first sergeants to seek information proactively from Human Resources Command (HRC) about future assignments or reassignments. This can help "manage the chaos."

For its part, HRC must look at the brigade's mission set holistically. If Forces Command directs the brigade or a battalion within the brigade to execute a mission, in-lieu-of or otherwise, exceptions may need to be made to accommodate that unit's manning requirements.

Training. Developing simple, executable plans for units to follow is a key component to a successful organizational Reset. The basic processes and systems need to be established in writing, enforced in consistent regular execution, and assessed and reassessed along the way, or the unit will not achieve its highest potential.

A way to educate inexperienced officers and NCOs is through regular professional development training sessions designed for all leaders. This approach builds teamwork (something desperately needed when the unit had been split apart for more than 18 months) and fosters cross-talk among peers and subordinates alike.

In many situations at the battery level, commanders and their first sergeants were involved directly with the planning, preparation, coordination and execution of various individual- and section-level training events. The senior leaders' direct involvement in unit training allowed the younger, inexperienced officers and NCOs to see what "right looked like" before they attempted to execute the training on their own.

Attacking the larger problem of higher-level training, more complex exercises demand a concurrent staff training plan starting with the basics of teaching the military decision-making process to both officers and NCOs. These educational opportunities must then be reinforced through hands-on practical exercises that include battalion command post exercises.

The battalion had moderate success with this training approach, but found that most challenges could be attributed to personnel turnover. Between R-Day and R+270, the battalion functioned with one field grade officer (besides the battalion commander) and changed that field grade out at R+180. In addition, during this timeframe, three battery/company commanders changed command, three first sergeants changed out; seven captains transitioned from the batteries to the battalion staff and then to the Captain's Career Course and four primary staff NCOs changed position—some more than once. With that amount of turbulence and without a higher headquarters to help, it is difficult to train a staff properly.

Specific MOS retraining or refresher training was a key advantage to getting the units "back in the saddle" and on track to field HIMARS. We used fixed-site resources here at Fort Sill—the Hamilton Digital Facility, Critz Hall (13M refresher) and Knox Hall (13P refresher).

The Hamilton Digital Facility's ability to replicate either a fires brigade or a maneuver brigade combat team is exceptional. The battalion reaped large dividends from just two weeks of training facilitated by this group.

Mobile training teams (MTTs) are available also and will come to your location to train your Soldiers if requested.

Having MTTs for other than 13M or 13P might be useful to train specialty, low-density MOS, such as supply clerks and personnel administrators. As non-FA Soldiers returned to garrison duty, filling positions in their MOS, their learning curves were steep. If other branches offer the MTTs for their troops, we recommend using them.

Time. The most efficient use of time is to conduct multi-echelon training at every opportunity. This methodology's effectiveness has not changed in more than 20 years. When manning shortfalls combine with inexperience and with training opportunities being few and far between, packing every training opportunity into an event is absolutely critical.

For a battalion to accomplish the training required, the commander needs time allocated so he can tailor the unit's training to address complex core tasks.

Taking the time to conduct platoon and battery reintegration events—married Soldier retreats and Single Soldier/Unit paintball retreats—rebuilt the team. Also, allocating time for units to retrain or refresh the skills of recently redeployed Soldiers resulted in self-confident Soldiers and junior leaders who know how to lead their organizations.

1st Battalion, 14th Field Artillery, conducts a HIMARS live-fire demonstration on 12 June on Fort Sill after concluding its certification training. (Photo by Robyn Baer, *the Cannoneer*, Fort Sill)

Requiring battery commanders to communicate and integrate with the battalion headquarters during individual-battery training events greatly improved the battalion's ability to control units outside the garrison environment.

The first battalion command post exercise in March laid much of the groundwork to execute three consecutive Artillery Table VIII live-fire qualifications in April, May and June. Conducting multi-echelon training from the beginning allowed the battalion's combat trains to be established complete with administrative/logistic operations center, maintenance control section and mobile kitchen trailer during the final week of live-fire qualification in June. In three short weeks of live-fire qualifications training, the battalion progressed from "a slow crawl" to a "fast-paced walk."

Higher Headquarters Oversight. Without the battalion "responding" to a higher headquarters, there is little training value in the end, so the brigade headquarters needs to be a part of a battalion's Reset process.

A higher headquarters must provide direct TRO of a battalion for that unit to achieve combat proficiency. Although battalion commanders have 17-19 years of service on average, they still experience many "firsts." The lack of a higher headquarters commander and staff created a void in both command and control.

Having a brigade commander from whom to seek guidance, insight and direction is extremely important. Without that resource, we made several "wrong turns" and had to start over or redirect to get back on course. The commander-to-commander relationship is a critical component of commanding a unit whether that unit is in Reset or not.

Additionally, having a higher headquarters staff to research information, seek solutions to resourcing issues and help in scheduling benefits the battalion greatly. In our situation, the brigade and battalion staffs were comparable—both in experience level and knowledge. This created additional burdens on every command team across the brigade. To fill the void, battalion commanders, at times, became executive officers or S3s again while battalion command sergeants major became operation sergeants major.

This battalion and its sister units functioned without the presence of a brigade commander or his staff. However, we would not recommend that this trend continue.

ARFORGEN—the Key. When units are not aligned or "yoked together," the strength of that unit is lost. The 1-14 FA's experience has shown that for a fires battalion within a fires brigade to Reset and regain that strength, that fires brigade *must* be included in the ARFORGEN cycle. By doing so, personnel management becomes a brigade effort and not an individual section, platoon or battery challenge managed by a battalion. Through ARFORGEN, the right people will be assigned to the units at the right time to enable it to move forward and retrain its core competencies.

As an ARFORGEN fires brigade unit, every subordinate unit—organic or assigned—will follow the same Reset/Train/Deploy timeline, enabling the brigade to synchronize the retraining effort collectively. This would result in regaining some of that lost strength by capitalizing on every unit's training opportunity and by training multiple echelons simultaneously.

Including fires brigades in the ARFORGEN cycle enables units to manage the time required to Reset and retrain. Finally, establishing fires brigades as life-cycle units ensures TRO is provided to every subordinate unit with the brigade. ARFORGEN enables the brigade to command and control the organization.

For three and a half years, assigned four distinct missions, with a peak unit strength of approximately 650 Soldiers and a peak deployed strength of more than 340 Soldiers, the 1-14 FA answered the nation's call. Resetting will continue until the last Soldier returns home safely; in the meantime the 1-14 FA stands ready to provide lethal rocket and missile—precision or area—fires in support of the joint/coalition maneuver commander.

Lieutenant Colonel Geoffrey P. Buhlig, Field Artillery (FA), is the Capabilities Development Division Concepts Officer for the Fires Center of Excellence at Fort Sill, Oklahoma. Previously, he commanded the 1st Battalion, 14th Field Artillery (1-14 FA). He served as the Brigade Executive Officer and Brigade S3 for the 214th Fires Brigade and as the Battalion S3 for 1-14 FA, deploying in support of Operation Iraqi Freedom I. He served as a Battery Commander, Brigade Fire Support Officer (FSO), a Battalion Fire Direction Officer and a Battalion FSO in the 1st Cavalry Division, Fort Hood, Texas, deploying in support of Operation Desert Strike. He also served in the 1st Armored Division in Wiesbaden, Germany, as a Company FSO during Operation Desert Shield/Desert Storm. He holds a master's degree in Counseling and Leader Development from Long Island University, Brookville, New York.

The author would like to recognize the leaders who saw this process through to completion: 1st Lieutenant (P) D. Kapono Aki, and Captains William B. Cuffe, David M. Chudy, Stephen R. Alley Jr., Michael B. Taylor and Command Sergeant Major Julio Candelario. This article's content was provided by every Soldier, NCO and officer of the 1-14 FA. They embraced the challenge, every day—at home or in theater—without complaint. These Soldiers sought to exceed the standard, and they did in so many ways.

Increasing the Flow, Plugging the Holes —Addressing FA Manning Challenges

By COL James P. Inman and
LTC Michael J. Gould, both FA

Over the years, we all have heard disparaging comments about the Field Artillery (FA) and Fort Sill, Oklahoma—that they are "behind the times," do not "get it," are out of touch, and are precision, heavy, deep-attack or weapons-system focused. Well, FA has a Campaign Plan with a clear vision, mission and end state. It is a multiyear, long-term effort that rebuilds and transforms FA while simultaneously supporting the Army's ongoing operations.

The Chief of FA continually solicits input, and the FA community needs to embrace *our* campaign plan. Now is the time to get "up to speed" with what is happening at the Branch's strategic level and provide that input. Through all of our efforts, we can improve and solve many of the challenges affecting FA.

This article explains the strategies FA is using to mitigate the manning challenges and highlights the personnel portion of the FA Campaign Plan, specifically as it pertains to commissioned officers. It addresses challenges by grade and the strategies being worked to help fix them. This article discusses on-going efforts and enables *you* to provide input on solutions as well.

While FA certainly has its fair share of challenges, what is most encouraging is our Army and Branch senior leaders are aware of them and aggressively are taking steps to solve them while meeting the requirements the nation expects of our Army.

Out of Balance. First, it is important to note that, while the FA has numerous personnel challenges, most are not unique to our Branch and, in fact, are shared by the Army as a whole. The US is six years into the War on Terrorism (WOT), and as General George W. Casey Jr. said, "Our Army is out of balance."

Certainly FA is out of balance as well, but we aren't the only branch that is challenged. As an example, our brothers and sisters in

CPT Rimas A. Radzius, 3rd Battalion, 320th Field Artillery, 3rd Brigade Combat Team, 101st Airborne Division (Air Assault), watches from an overpass as Shia pilgrams observe Arba'een in Mahmudiyah, Iraq, 25 February. (Photo by 1LT Michael T. Denison, MultiNational Division, Central)

multifunctional logistics and military intelligence have more transition team requirements than we do. Our attrition numbers are in line with other combat arms branches, who also share a similar erosion of core competencies.

Perhaps FA's biggest challenge is a shortage of officers. At every grade, lieutenant through lieutenant colonel, we do not have the number of officers that we need to meet our requirements. As our Army has grown in structure, both in pure size and through transformation to modularity, the number of FA requirements continues to rise.

FA Campaign Plan. The first strategy to improve the FA Branch is to increase the flow; by this we mean increase the number and quality of officers choosing Field Artillery. The FA Campaign Plan has a six-pronged strategy (see the figure) to increase the number and quality of officers choosing FA and, at the same time, to plug the holes created by attrition.

Recruiting. FA is working hard to ensure the Army accesses the correct number of lieutenants each year and from the correct balance of commissioning sources. Our Branch is interested not only in numbers, but also in quality. The FA Proponency Office (FAPO) at Fort Sill is responsible for this mission. It oversees a strategic marketing outreach for the US Military Academy (USMA) and Reserve Officer Training Corps (ROTC) FA accessions. Of note, Officer Candidate School continues to be an excellent commissioning program and is responsible for a large number of our new accessions each year.

Accessions are the only way we can begin to fill the gap and meet FA's needs for officers from lieutenant through colonel. FAPO's objectives are to increase the quality and quantity of accessions from USMA and ROTC. The goal is to encourage as many high-caliber cadets as possible to choose FA as their branch. Therefore, the Branch is getting the FA story out to educate cadets, their influencers, staffs and faculties through the Internet and other media.

We are working with Army Accessions Command to develop videos, emails, presentation packages and a website to reach out to USMA and ROTC cadets. For the first time in more than two years, FA has coordinated the return of live-fire Artillery training for ROTC cadets during Warrior Forge at Fort Lewis, Washington, and USMA cadets at Camp Buckner, New York. FA also has resourced USMA summer training at Fort Knox, Kentucky, with the Multiple-Launch Rocket System (MLRS), High-Mobility Artillery Rocket System (HIMARS) and Paladin 155-millimeter self-propelled Artillery units to provide cadets with the maximum exposure to Artillery systems and Soldiers. Most importantly, we are counting on *you* to tell our story and encourage these young leaders to choose Field Artillery.

Restore Confidence. The next strategy is restoring confidence in the FA Branch to reduce attrition. Attrition for FA officers is not greater than the officer population as a whole, but it is still at an unacceptable level. We need to slow both the number of FA officers who are leaving the Army and the number who want to leave the branch through branch transfer and/or career field designation. Restoring confidence in the branch, increasing the length of the FA Captain's Career Course (FACCC) and filling it to capacity, reducing the number of hard-coded FA transition team requirements, and—as best as we can—balancing the number of deployments and the length of time between deployments are all part of the strategy to stem attrition.

While we certainly have challenges, there are many things that are going well. Selection rates for promotion to captain, major and lieutenant colonel remain extraordinarily high. The number of officers selected for battalion command, promotion to colonel and selection for the US Army War College, at Carlisle, Pennsylvania, is as good as it has been in the past 25 years and rivals that of any other branch. As we continue to grow the Army, these opportunities only will increase. The message is clear—the opportunities to lead and advance in today's and *tomorrow's* FA are as strong as they ever have been.

Still, one of the most pressing challenges is that a number of officers at every grade want to leave FA, and this number is increasing. We all must educate and mentor these officers to determine what is in their, their families' and the Army's best interests. This is especially true of our company-grade fire supporters who are organic to maneuver units—it appears that in many instances, these officers have the perception that the "grass is greener" if they become an Infantryman, strategic planner or Military Intelligence officer, etc. Our Army needs high-caliber Field Artillerymen at every grade to ensure we are the best integrators and providers of lethal and nonlethal fires in the world. Every loss hurts FA and its ability to give the Army capable fire supporters.

- Conduct aggressive recruiting strategies.
- Restore faith and confidence in the Field Artillery (FA).
- Work aggressively to increase dwell time.
- Adapt institutional training.
- Support O6 command opportunities.
- Create general officer opportunities for FA officers.

Six-Pronged Strategy

There are many Armywide initiatives to decrease the number of officers leaving the Army. Among them is the fiscal year 2008/2009 Officer Menu of Incentives Program. This program is ongoing and has been quite successful. Nearly 70 percent of the eligible captains have taken one of the incentives. As newly promoted captains become eligible, many of them elect to participate and take one of the incentives as well.

Increased Dwell Time. FA officers are among the highest deployed segment of the Army. FA is working hard to ensure that its "fair share" of deployment requirements is in line with those of the other combat arms branches. The FA leadership worked with the Department of the Army to reduce the number of hard-coded FA requirements by making many of them 01 or 02A positions—that is, they can be filled by any officer or any combat arms officer. As an example, our brothers and sisters from the Air Defense Artillery now fill a portion of the former hard-coded FA positions on transition teams.

Another ongoing initiative is to fill the FACCC. During the past 18 months or so, the fill rate was only 50 percent. This was due to the demands of meeting the surge, the growth of the Army by two

brigade combat teams (BCTs) and other competing demands. The good news is that the school now is filling FACCC to capacity.

This has enormously positive strategic impacts for the FA as a whole. Not only are we able to set up our deploying units for better success (our number of FACCC graduates during the next year will be nearly double that of the past year), but it improves our captains' core competencies as well. Also with this larger pool of graduates, FA can try to assign more captains to units that will enable them to get key developmental credit as battery commanders or battalion-level fire support officers.

The greater number of officers graduating allows us to meet individual officer assignment desires better. While FA still has a number of captains who will deploy on transition teams, the number is lower than in the past. FA can balance the needs of the Army better with the officer's preference due to our increased pool of officers to assign.

Adapt Institutional Training. Another initiative that will help officers master core competencies (and increase dwell time) is increasing the length of the FACCC from 20 to 24 weeks in the near term, with a goal of increasing the length to 36 weeks in the next year or so (See "FACCC: Redesigned for Today and Tomorrow" by Majors Peter M. Sittenauer and Cornelius L. Morgan on Page 16 of this edition). This increased length will give officers the opportunity to reflect, enjoy a well-deserved break from deployment and enable the school to "re-Red" their core competencies. The additional four weeks of study will focus on hands-on training, live fire and certification in fire support, fire direction, weapons system and observed fire techniques. The Joint and Combined Arms and Battery Command blocks of the course will remain unchanged.

While attrition principally affects the captain and lieutenant colonel grades, we do have some challenges unique to majors. Perhaps the most significant challenge for an FA major is getting a key developmental assignment before his battalion command board. Most majors will not attend intermediate-level education (ILE) until they have two years' time-in-grade. FA, along with the entire Army, has a significant backlog of officers waiting to attend ILE. This backlog is compounded further by the demands associated with filling our combat units in support of WOT.

The good news is that the FA Branch will nearly double the number of FA field grades in ILE this coming year. This past summer, we graduated approximately 50 FA officers from all ILEs, and we currently have nearly 100 enrolled. This will help decrease the backlog of officers who need to attend and will begin to correct the equal distribution of ILE graduates across our combat formations and institutional Army.

The recent decision by the US Army Chief of Staff to award key developmental credit for majors serving on transition teams is a significant development. This, along with our increased number of officers in school, will help ensure all FA majors have an opportunity to receive a key developmental assignment before their battalion command board.

Leaders in the field can help by allowing officers to depart after they have completed their developmental opportunities to make room for those officers that need to get the same opportunity.

The FA Campaign Plan also calls for adapting the institutional training opportunities for majors attending ILE. The FA School is working with the Command and General Staff College, Fort Leavenworth, Kansas, to increase the rigor of the fires class electives available to officers attending the course. This will train field grade officers better to integrate fires at levels above battalion and improve their skill set in an environment that always is changing and becoming more complex.

O6 Command/General Officer Opportunities. One of the most significant challenges affecting FA—and the one that may be talked about the most—is the lack of O6-level commands and subsequently, opportunities to be selected as a general officer. The FA Campaign Plan addresses this and includes several initiatives that will increase the number of commands available. While not specifically designed to increase the number of commands, the FA Campaign Plan calls for an increase from six to 10 active fires brigades and/or their headquarters elements into the Army structure.

While we have not seen an FA officer selected for BCT command yet, we believe that our best opportunity to date is this next year. The number of available BCTs is larger, and the senior rater comments on battalion command officer evaluation reports are beginning to reflect that FA officers can command BCTs. Selection for brigade-level command is a very selective process, and it has taken some time for the Army to catch up with the fact that FA officers can compete for BCT command.

Additionally, we are assigning FA officers to key positions in preparation for BCT command—most notably the deputy commander position. The branch leadership is committed, engaged and working hard to ensure FA has the right balance and number of O6-command opportunities, to include BCT command, possibly leading to a promotion.

The biggest advocate and most important element of our branch is *you*—the Field Artillery Soldier and leader. FA has an enormously proud history and truly has a bright future. Our maneuver leaders, from company through corps commander, value their fire supporters and Field Artillerymen as much today as in any time in history. We provide an indispensible function for the combat formations of our Army.

We have a plan and are "on azimuth." FA is implementing strategies to solve its manning challenges. This is a continual and ever-evolving process. Ensuring the health of the branch is a team effort.

We ask that *each* of you get on board, become familiar with the FA Campaign plan, and provide your input and good ideas to the Chief of FA. Most importantly, we need *each* of you to be an advocate for our Branch—from recruiting the best young leaders to retaining them and beyond. Thank you for your service.

Colonel James P. Inman, Field Artillery (FA), is a student at the National War College, Washington, DC. Previously, he was the FA Officer Branch Chief at Human Resources Command (HRC), Alexandria, Virginia. He commanded 3rd Battalion, 320th FA (3-320 FA) in the 101st Airborne Division, Fort Campbell, Kentucky, deploying in support of Operation Iraqi Freedom (OIF). Among his other assignments, he served as the Division Artillery Operations Officer, Battalion S3 for 3-6 FA, and the 1st Brigade Fire Support Officer, all in the 10th Mountain Division, Fort Drum, New York.

Lieutenant Colonel Michael J. Gould, FA, is the FA Officer Branch Chief, HRC. Previously he was the Director of the Field Artillery Proponency Office, Fort Sill, Oklahoma. He commanded 6-27 FA, 75th Fires Brigade, Fort Sill, deploying in support of OIF. Among his other assignments, he served as Brigade S3 for the 212th FA Brigade, and Battalion S3 for the 2-18 FA, 212th FA Brigade, III Corps Artillery at Fort Sill.

Fires LEADERS' LIBRARY

Air Defense and Field Artillery Soldiers and leaders are more responsible for their career development and personal knowledge acquisition than ever before. Often, however, it's difficult to know where to go for helpful information without *some* guidance.

The Leaders' Library section features books and articles *your* leaders consider informative, important and relevant to today's continuously evolving operating environment and developing Pentathletes. Email the *Fires* Bulletin at firesbulletin@conus.army.mil with your thoughts about the selections.

I would like feedback from the field to know how these Leaders' Library selections apply, if at all, to your current situation.

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

Recommendations:

Afghanistan's Endless War—State Failure, Regional Politics and the Rise of the Taliban by Larry P. Goodson, Seattle, WA: University of Washington Press, 2001, 264 pages, $22.50.

The Savage Wars of Peace—Small Wars and the Rise of American Power by Max Boot, New York, NY Basic Books, 2002, 448 pages, $30.00.

The Owl and the Hawk: An End to Terrorism by John Errett, Punta Gorda, FL: Free Enterprise Press, 2007, 344 pages, $19.95.

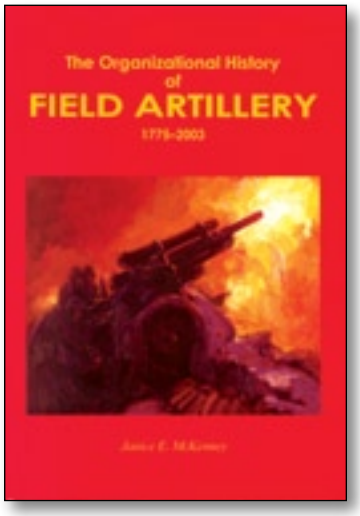
The Crisis of Islam—Holy War and Unholy Terror by Bernard Lewis, New York, NY: Random House Trade Paperbacks, 2003, 224 pages, $191.95.

Review of *The Organizational History of FA, 1775-2003* by Janice E. McKenney, Washington DC: Center of Military History US Army, 2007, 394 pages.

This book fills a significant void in the literature on Field Artillery (FA) history. Generally, historians concentrate on writing about FA in combat. In their books they write about Major Samuel Ringgold's and Captain James Duncan's batteries in the Mexican War of 1846-1848 and Colonel Henry J. Hunt's brilliant handling of FA units at Malvern Hill in 1862 and later Gettysburg in 1863, among other noteworthy FA captains and leaders. Such stories and others recall FA in battle and reaffirm why Major General Harry G. Bishop, Chief of FA in the 1930s, dubbed the FA as "*The King of Battle*."

By focusing on the great FA captains and battle, these authors miss a critical aspect of FA history. Seldom, do they examine the FA in *peacetime*. This is why Janice E. McKenney's book is so important. She tells the peacetime story about the evolution of the Artillery as an organization over the years; recounts in detail how the FA and the Coast Artillery (until separation early in the 20th century) were organized, staffed, trained and equipped; and explains the issues behind the various reorganizations over the years. After the separation of the two branches in 1907, the author centers her attention on FA organization evolution in the 20th century.

Equally as important, she highlights the contributions of those who fought to prepare for war, running from Henry Knox who organized the first Continental Army Artillery units in the American Revolution to recent peacetime leaders of *The King of Battle*. To tell this story, Janice E. McKenney writes about Colonel Decius Wadsworth, the Chief of Ordnance who struggled unsuccessfully early in the 19th Century to develop a system of Artillery material; Major Alfred Mordecai who played an important role in the development of Artillery material in the 1840s and 1850s; Major Carlos Brewer who laid the groundwork for the creation of the fire direction center in the 1930s; and other FA leaders who toiled in anonymity.



Without question, Janice E. McKenney provides a solid, scholarly account of the evolution of the Field Artillery as a branch to complement the historical literature that recounts Field Artillery operations.

Dr. Boyd L. Dastrup
FA Command Historian
US Army Fires Center of Excellence and Fort Sill

Center for Military History Collecting Historical Documents

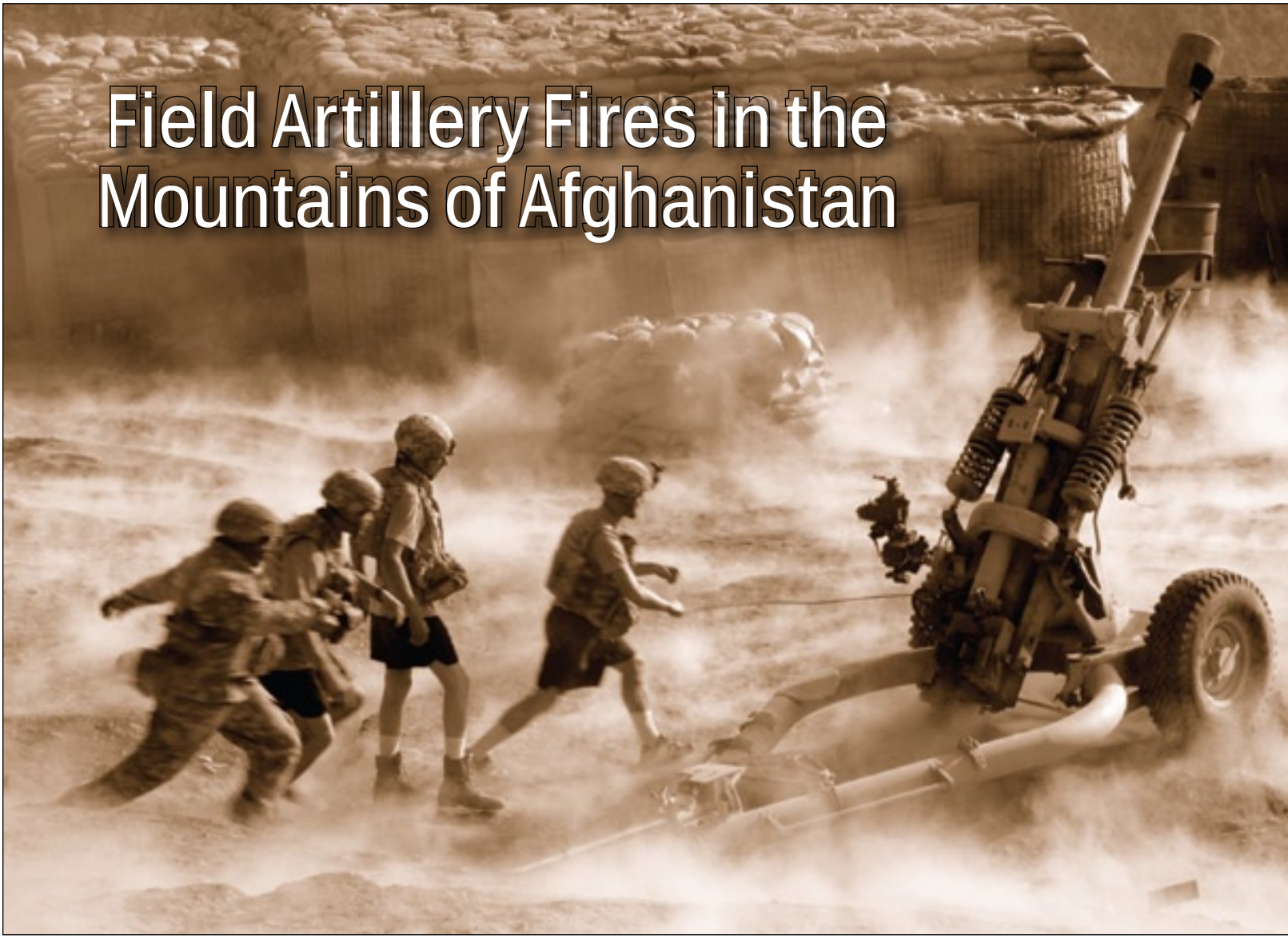
The US Army Center for Military History is requesting operational records relating to Operations Enduring and Iraqi Freedom. While many documents have been collected by deployed US Army military history detachments and other military historians, significant gaps still exist.

Historians' efforts to chronicle the Army's contributions to the War on Terrorism also have been constrained by gaps in available records, especially true in regards to the combat experiences of individual Soldiers.

Documents of historical significance for a narrative account of major events include but are not limited to: command and control, operations plans, maps/charts/drawings, after-action reports, operations summaries, correspondence (emails, letters, notes, meeting minutes and messages), senior leader guidance, journals, intelligence summaries and special studies/briefings.

For more information or to submit a document, contact LTC Robert Smith at robert.smith38@us.army.mil.

Field Artillery Fires in the Mountains of Afghanistan



By LTC Stephen J. Maranian, FA

During the seven years since September 11, 2001, our Army's Field Artillerymen have been called upon to perform countless nonstandard missions leading to what many have described as an alarming degradation of core competencies across the Branch. The 173rd Airborne Brigade Combat Team (BCT) Redlegs have deployed to combat three times since 2003 and stand out as an exception among our Army's Artillery formations as their mission each time focused primarily on delivery of fires.

This article highlights Field Artillery (FA) tactics, techniques and procedures (TTP) and lessons learned by the *Sky Soldiers* of the 173rd Airborne BCT during its most recent 15-month deployment to Afghanistan.

Activation of a New Battalion. The Army's modularization birthed the uniquely split-based 173rd Airborne BCT in the summer of 2006. The brigade headquarters and its two infantry battalions remained garrisoned in Vicenza, Italy; while it's reconnaissance, surveillance, target acquisition squadron activated in Schweinfurt, Germany; and fires, special troops, and brigade support battalions activated in Bamberg, Germany.

On 8 June 2006, the 4th Battalion, 319th Airborne FA Regiment (4-319 AFAR) activated, recapitalizing personnel and infrastructure from the inactivating 1st Infantry Division Artillery in Germany. This occurred while simultaneously restationing D Battery, 319 AFAR (D/319 AFAR)—the BCT's long standing organic firing element—from Vicenza to Bamberg. The fall of 2006 was characterized by a massive, but necessary, personnel turnover that provided 4-319 AFAR with the appropriate personnel composition for its modified table of organization and equipment (MTOE).

Mission—Iraq (Maneuver). With the *Sky Soldiers'* projected deployment to Iraq's Kirkuk Province in summer 2007, 4-319 AFAR, the *King of the Herd*, began training in October 2006 to perform as a maneuver task force. While howitzer sections and fire direction centers (FDCs) did conduct live-fire artillery certification, the bulk of the battalion's training time was spent on mounted and dismounted infantry skills at individual through platoon levels.

Though the battalion's mission eventually changed, training through the winter with the mindset of "every Soldier a rifleman" proved to be time well spent. With more than 70 percent of the battalion new to the brigade, this focus on basic Soldier skills served the battalion well throughout its deployment.

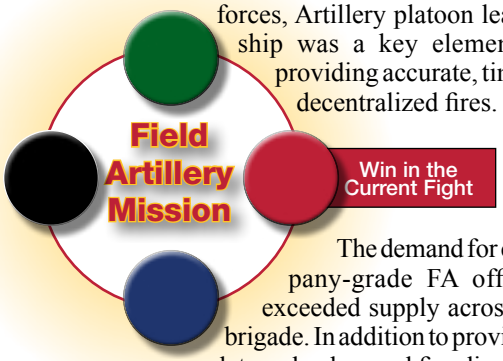
Change of Mission—Afghanistan (Delivery of Fires). While the Army surged forces into Iraq in early 2007, another less publicized surge occurred in Afghanistan. In the waning days of the brigade's final premission readiness exercise (MRE) training event at Grafenwoehr, Germany, the *Sky Soldiers*

Paratroopers from A Battery, 4th Battalion, 319th Field Artillery Regiment (A/4-319 FAR), rush to their howitzer to fire in support of 1-91 Cavalry (1-91 Cav) from Camp Lybert, Konar Province, Afghanistan, near the Pakistan border. A one-howitzer platoon, the crew was always the "hot gun" responding to calls for fire even if sleeping or doing physical training. (Photo by PFC Justin White, 1-91 Cav)

received a change of mission—the brigade would deploy to Afghanistan on an accelerated timeline. The 3rd Brigade, 10th Mountain Division—which was conducting a relief in place (RIP) with 4th Brigade, 82nd Airborne Division—was extended in theater. Upon completion of RIP, the unit shifted to Nangahar, Nuristan, Konar and Laghman Provinces in Afghanistan to prepare the way for the 173rd Airborne BCT's arrival.

The change of mission from Iraq to Afghanistan was significant for the 4-319 AFAR because it also meant shifting its focus from maneuver operations back to delivery of fires. While the battalion headquarters and its headquarters battery would retain a maneuver mission, each firing battery was assigned the task of providing three two-gun firing platoons that also could be used as forward operating base security forces if necessary. An added degree of difficulty in preparing for this mission was the requirement for four of the firing platoons to crew M198 (155-mm) howitzers, instead of the battalion's organic 105-mm weapons system.

Task Organization. With requirements to provide six firing platoons (two more than authorized by MTOE), field an infantry platoon, and train and certify on the M198, the battalion conducted a thorough analysis of manning requirements to task organize for the mission. This process began with picking the right combinations of leaders at the platoon and section levels, balancing talent and experience across the battalion without regard to current battery of assignment. With platoons spread across the breadth of the brigade's area of operations (AO) to provide fires for five maneuver task forces, Artillery platoon leadership was a key element of providing accurate, timely, decentralized fires.



The demand for company-grade FA officers exceeded supply across the brigade. In addition to providing platoon leaders and fire direction officers for the two additional firing platoons, maneuver task forces wanted the augmentation in their fire support elements (FSE) to manage lethal and nonlethal effects planning. Ironically, as a maneuver task force, 4-319 AFAR also required a non-MTOE supported FSE to conduct operations in AO King. The solution rested in "dual-hatting" some platoon leaders as fire direction officers and augmenting FSEs from the task forces' S3 sections.

After setting leadership teams, the next critical task was building competent FDCs with adequate expertise and manning to conduct continuous operations. With the decentralized array of firing platoons under the operational control of maneuver task forces, the battalion disbanded the battalion FDC, keeping only the battalion's fire direction NCO assigned to battalion headquarters.

This enabled the unit to optimize the pool of available Military Occupational Specialty 13D FA Tactical Data Systems Specialists. Augmented by computer-literate 13B Cannon Crewmembers and communications specialists, the battalion fielded six FDCs able to conduct continuous operations for 15 months.

Through approved requests for stay-behind equipment and operational needs statements, the *King of the Herd* acquired sufficient fire direction equipment to provide each platoon two independent, reliable means of data calculation with additional computers and manual computations to provide backup for any maintenance issues.

Nonorganic Weapons System Training. The stationing of the 2nd Stryker Cavalry Regiment and its M198-equipped 5th Squadron in Vilseck, Germany, was fortuitous. Its presence enabled 4-319 AFAR to sign for, train with and certify on M198 howitzers before deploying to Afghanistan. While this short training period was invaluable, it still left some experience gaps that required attention upon assumption of mission in theater.

Time, range limitations and ammunition availability were all constraints that hindered the battalion's ability to execute realistic, mission-oriented, live-fire training replicating Afghanistan's operational requirements. The battalion sacrificed its situational training exercise train-up for its MRE, substituting five days of live-fire training with the larger howitzer—the only live-fire training time available with the M198. However, the unit was able to self-train only adequately on the basics.

In Nangahar, Nuristan, Konar and Laghman Provinces, most fire missions are fired out of traverse, at high angle and at ranges greater than 20 kilometers. Range restrictions at Grafenwoehr, Germany, limited 4-319 AFAR to firing strictly low angle on a single azimuth of fire and—due to ammunition availability—with single lots of high-explosive projectiles and low-charge propellants.

The inability to train and familiarize with the myriad types and lots of projectiles and propellants that the unit needed to master in Afghanistan proved to be significant. During its first week in theater, the battalion fired two missions with incorrect ammunition (incorrect square weight and incorrect projectile type).

The unit requested and received prompt support in the form of a mobile training team (MTT) from Fort Sill, Oklahoma. The MTT spent two weeks with the battalion's firing platoons and dramatically improved the battalion's knowledge base and experience. Incorporating an MTT into a unit's training cycle is the optimal solution for units deploying with a nonorganic howitzer system in the future.

Fighting with Fires. The *King of the Herd* greatly benefited from the brigade's professional and knowledgeable team of fire supporters and maneuver commanders. Experience from two previous deployments to Afghanistan imbued the brigade commander with a deep understanding of the need to integrate fires *and* to fight with fires. On a daily basis, troops in contact (TIC) suppressed anti-Afghan forces (AAF) with small-arms while defeating them with fires. The 4-319 AFAR fired more than 15,000 rounds during its deployment—well over 60 percent of which were in support of TIC situations with devastating effects to the AAF.

Fighting with fires goes well beyond the FA's ability to deliver steel on target. Integration of all fire support assets—field artillery, mortars, Apaches and Kiowas, and close air support (CAS)—into the fight proved decisive in most of the hundreds of engagements between the *Sky Soldiers* and the enemy. The ability to synchronize all of these assets requires practice and skill.

As fire supporters gained experience in combat and continued to train in theater, they confidently deconflicted artillery and mortars from air platforms by altitude and lateral separation rather than defaulting to deconfliction by time. Simultaneously bringing all available assets to bear on a target is an area that should be a training focus. Company commanders, platoon leaders and their observers must have the opportunity to practice the complicated synchronization of these assets during live-fire training events before and throughout their deployment.

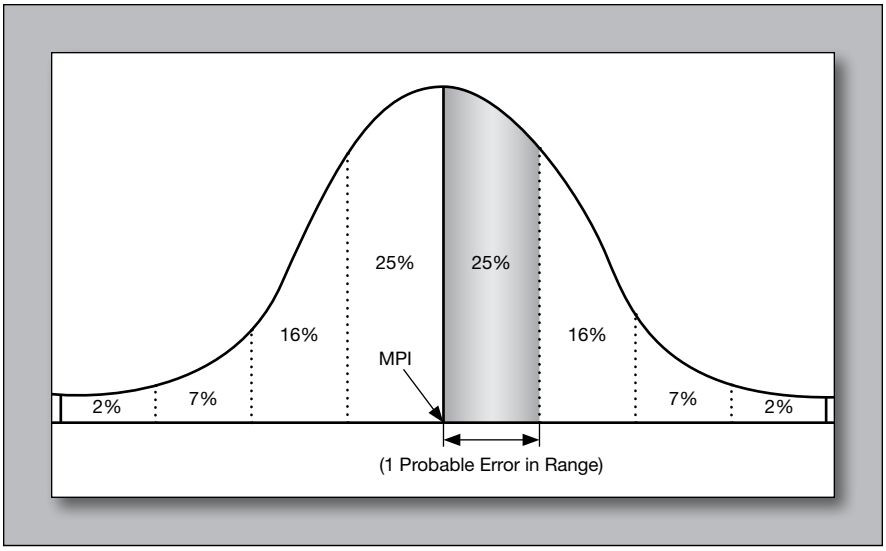
Fires in Mountain Warfare. Fighting in the mountains comes with unique challenges that require deliberate planning and preparation. Positioning howitzer platoons to support operations simultaneously with overlapping coverage optimizes flexibility and minimizes the challenge of firing at targets on the reverse slope of mountains or hills. Firing high-angle missions at long ranges dramatically increases the probable error (PE) in range compared to low-angle, short-range fire missions executed during home station training.

An examination of tabular firing tables shows a five-fold increase in PE in range between firing a 155-millimeter round low-angle at a range of 6,000 meters (PE in range is 21 meters) and firing at high-angle at a range of 25,000 meters (PE in range is 106 meters). Accounting for nonstandard conditions and assuming accurate target location and a normal dispersion pattern (see figure), a round fired high-angle at 25 kilometers would produce a 424-meter (plus or minus) variance in range on flat terrain.

This fundamental element of ballistics can be exacerbated greatly when firing at a reverse-slope target. Educating observers and maneuver commanders about accuracy expectations for long-range, high-angle and reverse-slope targets allows for proper selection of firing unit based on positioning—or selection of an alternate method (such as attack aviation or CAS) of engaging the target.

Direct Fire. An aspect of FA operations in the mountains that proved advantageous to the battalion was the ability to conduct direct-fire calibrations. Many firing positions' proximity to nearby uninhabited mountains facilitated a more efficient and timely calibration of many ammunition lots, eliminating the need for dedicated observers.

Direct fire is another skill set that should be practiced, particularly when deploying to an area where there is constrictive terrain where the enemy easily can approach to within small-arms range of firing positions. During the course of the brigade's deployment, two *King of the Herd* firing platoons valiantly defended themselves and their bases with direct fire, effectively engaging AAF and ending the fights with their direct-fire skills.



Range Probability Curve

Lightweight 155. The attachment of C/3-321 AFAR *Cobras* in January increased the tube strength in AO Bayonet by 50 percent. Recently fielded with the M777A2 howitzer, the *Cobras* arrived well trained and ready to fight. They assumed responsibility for the position areas with the highest operational tempo and flawlessly sustained the high-level of accuracy and responsiveness expected by the maneuver task forces.

Sustaining a new, low-density weapons system comes with challenges. The most significant challenge for the battalion was finding long-term, reliable power generation to keep the systems' electronics functioning. Dedicated two-kilowatt generators with a high-mobility multipurpose, wheeled vehicle as a back-up worked in the short term; however for static position areas such as those found in most of Afghanistan, the long-term solution should be hard wiring. Overall, sustaining the M777A2 was an efficient process, with parts flow and maintenance systems working well.

With the *Cobras* came the Excalibur precision-guided projectile that turned out to be a valuable addition to the brigade's arsenal. Following a test fire, during which Excalibur impacted on target and functioned properly, the battery was called upon more than one occasion to deliver precision fires at pin-point locations. The *Cobras* did not fire an Excalibur during their new equipment training (NET), so this test fire was their first live Excalibur mission and allowed them to test and refine their TTP for subsequent fire missions. Live fire of Excalibur should be incorporated into future M777A2 NET.

Ultimately, the success of any unit in combat derives from the Soldiers, NCOs and junior commissioned officers serving in our formations. The TTPs and lessons learned described in this article are a function of being "in the right place at the right time" and of having the opportunity to execute a standard FA mission in combat.

Lieutenant Colonel Stephen J. Maranian, Field Artillery (FA), commands the 4th Battalion, 319th Airborne Field Artillery Regiment (4-319 AFAR), 173rd Airborne Brigade Combat Team, Bamberg, Germany, which redeployed in July from Operation Enduring Freedom. He has served as Special Assistant to the Commanding General, US Army Europe, Heidelberg, Germany; Deputy G3 for 1st Infantry Division in Tikrit, Iraq, and Wurzburg, Germany; 1st Infantry Division Artillery Executive Officer (XO) and Battalion XO for 1-6 FA, all in 1st Infantry Division in Bamberg, Germany; and as Brigade Fire Support Officer in the 173rd Airborne Brigade, Vicenza, Italy. He commanded C Battery, 2-82 FA and Headquarters and Headquarters Battery, 1st Cavalry Division Artillery at Fort Hood. He holds a Master of Arts in Human Resources Development from Webster University, St. Louis, Missouri.

Army's First THAAD Unit Activated

The US Army's first Terminal High-Altitude Area Defense (THAAD) battery activated during a morning ceremony on 28 May at Fort Bliss, Texas. A Battery, 4th Air Defense Artillery (ADA) Regiment, 11th ADA Brigade (A/4-11 ADA), 32nd Army Air and Missile Defense Command, will train on and man the THAAD weapons system.

THAAD, developed in a partnership between the Missile Defense Agency (MDA) and Lockheed Martin, is designed to defend US troops, allied forces, population centers and critical infrastructure against short-to-intermediate-range ballistic missiles. It is the only weapon system that engages threat ballistic missiles at both the endo- and exoatmospheric altitudes. THAAD is part of a system that MDA is developing to defend against ballistic missiles of all ranges and in all phases of flight.

The unit's activation and receipt of 24 THAAD interceptors, three THAAD launchers, a THAAD fire control center and a THAAD radar as part of the initial fielding allows A/4-11 ADA to prepare for full-system fielding beginning in 2009. (See figure for THAAD's historical timeline.) The THAAD battery also will be equipped with logistic support assets, such as a battery support center, an integrated "contractor support system" and spare parts required for a fielded unit.

"This is a historic day for the ADA community. Delivery of the THAAD Weapons System to the first THAAD battery signifies that we're one step closer to the day THAAD will protect our Soldiers, friends and allies around the globe," said Tom McGrath, Program Manager and Vice-President for THAAD at Lockheed Martin. He said that THAAD's precision engagement capabilities, combined with the power of hit-to-kill engagement, offer warfighters protection from the threats of today and tomorrow.

Even though Soldiers from Fort Bliss have operated the THAAD system in flight tests successfully during the past two years, actual unit training on the equipment began in April. THAAD flight tests will continue with two more flights scheduled before the end of this fiscal year (FY) and two during FY09. To date, seven successful flight tests that include four representative target intercept tests have been recorded.

Kathleen M. Doyle
Writer/Editor, ADA Online
ADA School, Fort Bliss, Texas

2010	(*Projected*) Materiel Release Review Board
2009	(*Projected*) First unit equipped.
May 2008	A/4-11 ADA activated.
Mar 2008	THAAD table of organization and equipment and modified table of organization and equipment approved.
Nov 2007	First Activation Conference
Nov 2005	THAAD flight testing resumed.
Jan 2002	THAAD realigned under MDA.
Mar 2001	A/1-6 ADA inactivated.
Jun 2000	THAAD moved to engineering and manufacturing development phase.
May 2000	THAAD operational requirements validated.
Dec 1999	B/1-6 ADA inactivated.
Jun 1999	First THAAD Intercept
Feb 1996	Test Battery, A/1-6 ADA, activated.
Jan 1995	Test Battery, B/1-6 ADA, activated.
Apr 1995	First THAAD Flight Test
Jan 1992	Terminal High-Altitude Area Defense (THAAD) requirements published.
5 Dec 1991	Missile Defense Act of 1991
Feb 1991	Scud missile kills 28 Soldiers.
Jan 1991	Start of Desert Storm

On 25 June, the THAAD element completed another successful test involving the intercept of a separating target inside the earth's atmosphere. (Photo courtesy of the Missile Defense Agency, Washington, DC)

Preparing Air Defenders for the Combat Advisor Mission

SFC Jay Carey, 0832 Military Transition Team, 3rd Heavy Brigade Combat Team, 3rd Infantry Division, gives instructions as Iraqi Army soldiers from the 2nd Light Infantry Battalion, 3rd Brigade, 8th Iraqi Army Division, practice searching a detainee in Al Wehda, Iraq, 12 February. (Photo by SGT Timothy Kingston, Joint Combat Camera Center)

By CPT Cory N. Scott, ADA

Having recently returned from a tour in Iraq as a staff/maneuver advisor on a battalion military transition team (MiTT), I can attest to the steep learning curve for Air Defenders in terms of the nontraditional Air Defense Artillery (ADA) "bread and butter" skills required of combat advisors. Now, as commander of an observer/controller company at Fort Riley, Kansas, that trains combat advisors, I see a cultural transformation that quickly is legitimizing the advisor mission—not only to Iraq and Afghanistan, but in general—as an enduring mission for our Army as part of what General John P. Abizaid described as "the long war."

Air Defenders can expect transition team assignments to become part of a standard career progression (at least for junior officers and some NCOs) with the shortage of eligible Army personnel to fill the ranks.

To understand how to prepare for 60 days of advisor training at Fort Riley—and for spending a year overseas as an advisor—it is critical to understand what the combat advisor mission and the Fort Riley training mission specifically entail.

The Combat Advisor Mission Defined. The combat advisor mission requires US officers and NCOs to teach, coach and mentor host nation (HN) security force counterparts. This enables the rapid development of our counterparts' leadership capabilities; helps develop command and control (C^2) and operational capabilities at every echelon; allows direct access to Coalition Forces (CF) enablers to enhance HN security force counterinsurgency (COIN) operations; and incorporates CF lethal and nonlethal effects on the battlefield.

Leadership. The rapid development of leadership capability relies heavily on our ability as combat advisors to teach, coach and mentor the commanders and staff officers in our counterpart units. Combat advisors should not try to "build American units." Instead they should rely heavily on their own leadership and staff experiences and knowledge to coax the HN counterparts in a positive direction toward mission accomplishment and independence from CF support.

Leveraging individual and collective combat skills at the tactical level sets the example for the HN unit during operations and develops the unit via a "train-the-trainer" approach. How-

ever, attempting to lead counterpart units outright is a poor tactic and even could get advisors killed—in extreme scenarios—if the rapport with the HN's unit leadership is damaged.

Leadership encompasses a complex expanse of various components, all of which contribute to leadership style and organizational success. By approaching HN unit leadership development from a more rudimentary perspective, combat advisors will enjoy greater levels of success.

COIN. A more basic approach is also advantageous for developing C^2 and operational capabilities at each echelon. While teaching staff fundamentals, keep in mind that combat advisors are not part of the HN unit staff. Coach *them* to create, develop and implement their own systems and products, allowing them to do the work themselves. Recommend good ideas until "blue in the face," but if your counterparts don't like the suggestions, don't take it personally.

As in our Army, "bootlegging" is okay when it comes to developing organizational C^2 and operational capability. If a centralized and approved doctrine exists within the counterpart unit's organization, then learn it and attempt to teach, coach and mentor the HN unit staff sections based on that doctrine. This helps standardize the entire force. To improve any doctrinal shortcomings, coach the counterparts to make recommendations to their higher headquarters like we do in our own Army. Ideally, this will help teach them to become a learning organization.

Once your counterparts grasp the basic integrated staff concepts, push to incorporate ideas from the US Army's COIN doctrine (*Field Manual [FM] 3-24 Counterinsurgency*). Develop and follow a methodology similar to the one outlined in Figure 1 to progress toward HN security force independence. Keeping your counterparts' capabilities in mind, infuse COIN doctrine early so it is engrained in everything they do as a unit.

COIN operations can become resource-intensive, and HN units do not always have access to the same pools of money or technological assets that our American line units enjoy. As a combat advisor, you give your counterparts the opportunity to access these enablers, enhancing their ability to conduct COIN through partnering with CF units and as leverage to influence HN unit leadership actions indirectly. For example, transition teams can certify team personnel with the Commander's Emergency Response Program (CERP) to involve and empower their HN leadership in the process of allocating money for local projects that will improve their communities.

Though CERP funds come from American units, HN security forces reap the benefits by interacting with the local leadership and citizens to decide how the money is used. This increases the public perception of the HN security forces' competence and power. The combat advisor gain influence with the HN forces through these processes.

Likewise, advisors can enhance their relationship with local CF units by permitting the CF to leverage HN human intelligence and the "collective face" of HN security forces on operations. In the COIN environment, these "commodities" could be the advisors' two biggest advantages in facilitating partnership between HN units and the CF units operating in the same areas of operations (AOs). They also may be the only methods for leveraging the CF support a team needs to sustain itself on the battlefield.

Effects. Other types of support the HN units and the transition teams need from CF come in the forms of both lethal and nonlethal effects. These are the final pieces to the advisor mission, and it can make or break the transition team experience. When coaching the host nation counterparts to request and integrate these effects into the planning cycle, point out that the earlier the effects are requested the better.

The team's own survivability on the battlefield may hinge on the ability to call for close combat attack (CCA) or close air support (CAS). As the advisors, and potentially the only American ground forces in the AO, mastering the capability to validate legitimate military targets while simultaneously identifying the second- and third-order effects of prosecuting those targets for your HN unit leadership on the ground is a must. No advisor, no bomb.

Calling for CCA or CAS is one example of a battlefield task that an advisor might have to execute without the help of Field Artillery brethren. Typically, the transition teams will have the military occupational specialties (MOS) needed to complete the advisory mission, though teams currently are resourced on an *ad hoc* basis with some personnel filling positions outside their MOS. Air Defenders typically fill "branch immaterial" positions but could fill the fire support officer position on a transition team.

Composition. While the composition of the transition team will depend on the team type and final destination, the typical structure of a transition team consists of 11 to 15 officers and NCOs, generally mirroring what wound be expected on an American Army line unit staff. Because of the "top heavy" composition, combat advisors also can expect to perform some traditional duties of junior Soldiers (driver, gunner, etc.) for mounted combat operations. Junior enlisted Soldiers are not organic to transition teams unless the team is lucky enough to negotiate augmentation from its local American unit.

While always challenging combat advisors mentally, the mission will be physically challenging due to this inherent team composition. The Fort Riley training helps focus the necessary mental and physical advisory battlefield skills.

Training Mission Defined. While Air Defenders are very good at adapting to a changing air picture or air threat, we also are proving our ability to adapt to "needs of the Army" missions like a transition team assignment.

Preparation. The ADA Captain's Career Course currently incorporates a discussion panel of former Air Defense combat advisors assigned to Fort Bliss, Texas, so students have the opportunity to interface with subject matter experts. This is a huge first step toward adapting to the complex, unforgiving and ever-changing environments we will continue to serve in around the world.

Air Defenders also can participate in a two- to three-week course at Fort Sill, Oklahoma, to get additional training to fill the fire support officer positions on transition teams (see Page 22 of this edition).

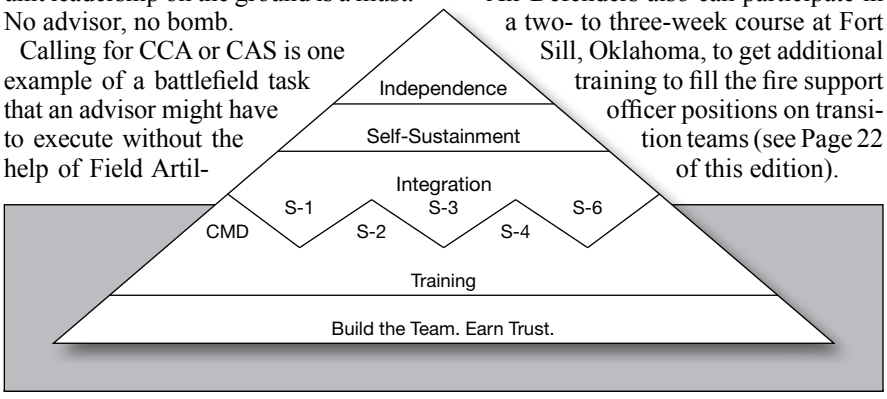


Figure 1: The "Pyramid" Concept as an Advisory Strategy

The 1st Brigade, 1st Infantry Division, at Fort Riley has established a Directorate of Cultural Influence and Counterinsurgency that is responsible for training the most essential pieces of the combat advisor mission: COIN, culture, history and language. Through this directorate's continually-improving curriculum, the ADA School can enhance its own curriculum for teaching COIN to junior officers. Integrating a more robust COIN curriculum will give Air Defenders the knowledge base needed to prepare better for the combat advisor mission as well as other missions encountered as part of global COIN endeavors. It certainly will prepare Air Defenders for success during the 60-day training model at Fort Riley.

Fort Riley. The Fort Riley training mission follows a standardized and ever-evolving model of training six days per week during a 60-day period. Students in-process, draw personal and team equipment, work through the training model, conduct a final training exercise to validate their teams as a whole, graduate and deploy in less than three months from start to finish. Based on the combat advisor mission description, the training builds around the various competencies that will contribute to success during execution of the advisory effort. Mastery (or at least a general understanding) of the advisor core competencies will increase the graduates' odds of becoming "effective" advisors while deployed.

Combat Skills
- Weapons Qualification
- Short Range Marksmanship
- Battle Drills
- Call for Fire

Force Protection
- Personnel Recovery
- Combat Lifesaver
- Biometrics
- Unexploded Ordnance

Technical/Tactical Training
- Military Occupational Specialties
- Communications Training
- Blue Force Tracker
- Detainee Operations
- Cordon and Search Operations

Culture
- History of Dominant Religion
- History of Region
- Customs and Courtesies

Advisor Skills
- Role of Advisor
- Use of Interpreter
- Gain Influence
- HSNF Organization

Counterinsurgency (COIN)
- Basic COIN
- COIN Application

Language

Figure 2: The advisor core competencies focus the Fort Riley training mission training model.

The first part of training focuses on culture, history and advisory skills with an initial dose of exposure to pertinent language skills needed as an advisor. As a combat advisor teaches, coaches and mentors his counterpart, knowledge of the counterpart's culture and language bolsters the relationship between the two parties and helps the advisor understand why the counterpart thinks the way he does. By knowing and speaking a few simple words and phrases in the native tongue, the advisor will impact the rapport-building process.

Establishing this bond as a working friendship is paramount and largely will determine the level of success when it comes to advising respective staff sections. Additionally, an understanding of the indigenous language, history and culture serves advisors well while traversing the neighborhoods and/or countryside of their particular AO. The ability to interact with the local populous on a more personal level will pay dividends for teams and their counterpart units in terms of earning the trust and confidence of the local populous. The local leaders and citizens undoubtedly will associate you, as the advisor, with the HN unit.

However, by trying to cram too much language and culture into a short period of time—such as a 60-day training model—likely will result in retaining less. Get online once you have identified what kind of team you are assigned to and download computer software to begin the exposure process. The Army offers *Rosetta Stone* language software via Army e-Learning accessible through Army Knowledge Online, or you can download the actual language software in use at Fort Riley from **http://www.tacticallanguage.com**.

Developing language skills and knowledge of culture and history are vital to the advisor mission, but understanding COIN arguably is the most critical. Basic COIN training is part of the standardized push from Fort Riley.

The ultimate goal as a combat advisor is to "work yourself out of a job." To do that, the HN unit must understand how to conduct independent security operations. *FM 3-24* is your COIN "bible." The interest our COIN doctrine has elicited worldwide makes it imperative that US military and government personnel are familiar with its contents.

Throughout the Fort Riley training, you will have the opportunity to develop and apply advisory skills and COIN knowledge. Through a series of approximately 10 leader engagments, you will meet with foreign-language-speaking role players to work through mostly nonconfrontational scenarios in various settings. Regardless of team-type, these experiences can be transposed to fit the whole host of possible situations combat advisors will face in theater. Team members not directly involved in the leader engagements still should pay attention to mannerisms, the sequence of events, how to use interpreters and the role of the advisor in the process.

Along with interspersed leader engagements that will challenge you to apply your knowledge of culture, language, history and COIN, the traditional individual and collective combat skills comprise the majority of the rest of the schedule. These training events challenge you to create and refine a team tactical standing operating procedures (TACSOP). Placing increased emphasis on establishing team operating norms at Fort Riley will allow the team to focus more on the advisory effort beginning with the first day in theater.

If you can make contact with the team you are replacing, ask for a copy of its current TACSOP. Make use of limited spare time on the training calendar to build, improve upon and rehearse the playbook of battle drills and team tactics, techniques and procedures (TTPs).

Time. Unfortunately, time is our enemy when it comes to training advisors. The Fort Riley training mission puts officers and NCOs (to include Air Force and Navy personnel) through a rigorous training curriculum, and that curriculum is evolving continuously. But let's be honest; 60 days of immersion training is only "just good enough."

Prepare to "drink from the fire hydrant" as an individual and as a team while progressing toward validation, graduation and deployment. Despite our efforts to train teams sufficiently, advisors still do a lot of learning once deployed. This is due partially to the uniqueness of each AO (even within the respective theaters of operation), the distinctive identities of each respective host unit and the individual personalities of counterparts. To help diminish the two to three month period of "figuring out your job" as a new combat advisor, there are resources you can familiarize yourself with before arriving at Fort Riley (see Figure 3).

Recommended Preparation for Training. With the immense availability of related articles, books and professional feedback, it is easy to get bogged down in the COIN learning process. The resources listed in Figure 3 largely are derived from the reading list in *FM 3-24* and will help in understanding COIN and the combat advisor mission as they pertain to both Iraq and Afghanistan.

Besides adding a steady diet of reading material, you can and should seek out former combat advisors, not only in the Air Defense community, but in other branches. Keep in mind when conversing with former advisors that every experience is unique; however, many of the experiences are transposable to situations most combat advisors will face while deployed.

The Combat Advisor Handbook (08-21) is another valuable resource that the Center for Army Lessons Learned (CALL) recently produced. Developed at Fort Riley, the handbook is a compilation of chapters written entirely by former combat advisors. It is a monumental step toward developing advisor doctrine and institutionalizing the combat advisor mission. As a timely, professional document, it will help prepare you for your future assignment.

Air Defense and the Future of Advising. Training and deployment as a transition team member develops Soldiers professionally in ways you never could have imagined. If nothing else, the advisor mission will teach many lessons in patience. Potentially, advisors live in some of the most austere environments on this planet, serving in a capacity you likely never could have predicted. Embrace the role as an element of one of the most important missions our nation could ask a Soldier to assume. Interestingly enough, there *are* some tiebacks to the Air Defense community.

Experience Benefits. First, the mission affords us the experience of operating in a small-team environment—a structure we currently use and will continue to use as members of Patriot crews, air defense and airspace management cells, ground-based midcourse defense crews and as staff members.

Second, the mission exposes us to parts of the Army we normally do not get the chance to work with (or are not accustomed to working with) on the battlefield, such as civil affairs, psychological operations teams, and operational line units. As a result, we learn more about our Army as an organization, how we fit in to the bigger picture as Air Defenders and how we can make our Army better.

- *Field Manual 3-24: Counterinsurgency* (Washington DC: US Army).
- David Galula. *Counterinsurgency Warfare: Theory and Practice*. (London: Praeger), 1964. (Lessons Derived from the Author's Observation of Insurgency and Counterinsurgency in Greece, China and Algeria)
- Carter Malkasian and Daniel Marston, editors. *Counterinsurgency in Modern Warfare*. (Oxford: Osprey Publishing), 2008. (13 authors examine the development and practice of counterinsurgency doctrine from the beginning of the 20th century to the Iraq conflict.)
- George Packer. *The Assassins' Gate: America in Iraq*. (New York: Farrar, Straus and Giroux), 2005. (A journalist for The New Yorker talks to Iraqis and Americans about Operation Iraqi Freedom.)
- Thomas Ricks. *Fiasco: The American Military Adventure in Iraq*. (New York: The Penguin Press), 2006. (A Definitive Account of the American Military's Tragic Experience in Iraq)
- Bing West. *The Village*. (New York: Pocket Books), 1972. (A First-Person Account of Military Advisors Embedded with Vietnamese Units)

Figure 3: Recommended Reading

Third, as our allies field new air defense technologies and capabilities under the auspices of our guidance, we will work closely with them to help develop unified doctrine and TTPs. Former advisors will have the skill sets to teach, coach and mentor allies in these undertakings.

Lastly, the mission shapes us into more well-rounded officers and NCOs by exposing us to COIN doctrine, cultures, histories and languages that otherwise we might not make the time to study. These are skills we likely will need in the Air Defense community as our current jihadist adversaries become more sophisticated on the asymmetric battlefield with their potential abilities to employ aerospace technologies against us and our allies.

Career Benefits. In terms of career implications and progression, the transition team assignment does not have negative repercussions. There is a temporary combat advisor additional skill identifier undergoing the permanent approval process. Human Resources Command incorporated the mission as part of the key developmental time for majors in conjunction with S3 and executive officer time and team chiefs for brigade and higher teams and equivalent echelons now are centrally selected. There are initiatives to create a combat advisor tab and to develop special duty assignment pay for returning advisors to serve as cadre to train new advisors. The concept of a permanent "Advisor Corps" currently is undergoing debate at the highest echelons of our military.

The combat advisor mission is a significant part of our exit strategies for both Iraq and Afghanistan, as transition teams will replace brigade combat teams in the long term. We can forecast the number of combat advisors in Afghanistan to grow to the levels we currently see in Iraq—approximately 4,500 advisors—during the next few years. Air Defenders inevitably will participate in this mission at some point throughout their careers, if not already.

Preparing in advance will make you more successful by lessening the steepness of the learning curve once you hit the ground. Combat advisor experience will make us more well-rounded Air Defenders through increased exposure to the rest of our Army and to different (but equally complex) facets of military operations.

For more information on transition team training please visit **http://www.riley.army.mil/units/trainingteam.aspx**.

Captain Cory N. Scott, Air Defense Artillery (ADA), commands B Company, 1st Battalion, 34th Armor Regiment (B/1-34 AR), in 1st Brigade, 1st Infantry Division, at Fort Riley, Kansas, training deploying teams of combat advisors in support of Operations Enduring Freedom and Iraqi Freedom (OEF and OIF). Previously, he was a Staff/Maneuver (S3) Advisor to an Iraqi Army tank battalion in Baghdad. He also served as a Platoon Leader/System Operator for 2-43 ADA, at Fort Bliss, Texas, deploying in support of OEF and OIF. He is a graduate of the US Military Academy at West Point, New York, and holds a Master of Arts in Leadership Studies from the University of Texas at El Paso.

MEADS: Evolving Capabilities

By William C. Wiese

The Medium Extended Air Defense System (MEADS) is a mobile air defense system being developed by Germany, Italy and the US. It will replace Patriot in the US, Hawk in Germany and Nike-Hercules in Italy and will supplement Patriot systems in Germany.

To meet the Army's scheduled fielding beginning in 2015, MEADS program engineers now are finalizing design drawings and test approaches for tri-national approval of the major end items that make up the advanced air and missile defense (AMD) system (see figure).

Flexibility for the Air Defense Commander. MEADS' major end items are smaller and designed for use in multiple configurations, so the system gives warfighters new options that increase flexibility, accessibility and response times.

MEADS will be able to drive or roll-on/roll-off C-130 and A400M aircraft and thus deploy quickly to the theater of operations. In the forward area, MEADS will be able to keep pace with fast-moving maneuver forces.

"Plug-and-fight" flexibility is being developed that will allow MEADS to exchange data with non-MEADS sensors and shooters and to move with ground forces and interoperate with other allied forces. Netted and distributed battle management command, control, communications, computers and intelligence will permit battle elements to join in or break off to protect forces as they move.

MEADS is required to command several distributed missile launchers while simultaneously detecting and tracking hostile forces and targets. Multiple communication paths will result in a system that is highly robust against jamming, providing significant protection while maneuvering, yet allowing dispersion of units over a wide area. It will be possible to hand over command and control of the launchers and missiles to a neighboring battle management unit while the initial systems are moved.

The design approach emphasizes high firepower and performance, reducing the number of assets required to defend a given area. Battle management decisions are made in the tactical operations center (TOC) shelter, which is vital to coupling both engagement operations and force operations with intra- and intersystem networks. The German, Italian, US and NATO command and control functionality is packaged in a single-shelter configuration carried on three separate national prime movers based on national operational preferences.

Each TOC version is capable of nation-specific air transport. There are three workstations in the shelter configuration; however, for normal engagement operations and force operations, only two operators are required.

All equipment within the TOC shelter is ruggedized commercial-off-the-shelf or military-off-the-shelf. The self-contained shelter equipment meets all of the operational, environmental, personal protection and transportability requirements of the International Technical Requirements Document that governs MEADS.

The MEADS requirements emphasize open architecture, plug-and-fight sys-

MSgt Ronnie Klipp, 403rd Aircraft Maintenance Squadron, monitors the loading of the Medium Extended Air Defense System onto an US Air Force C-130J during the Berlin Air Show, Berlin, Germany, 17 May 2006. (Photo by Wolfgang Hofman, Department of Defense)

tems capabilities and mandate that both MEADS and non-MEADS end items be integrated into a task force by MEADS. "The requirements mandate that MEADS must dynamically integrate both MEADS and non-MEADS major end items into a task force. We are also working to a performance objective that the MEADS TOC must be able to function as an AMD task force TOC," said Jim Cravens, MEADS International president.

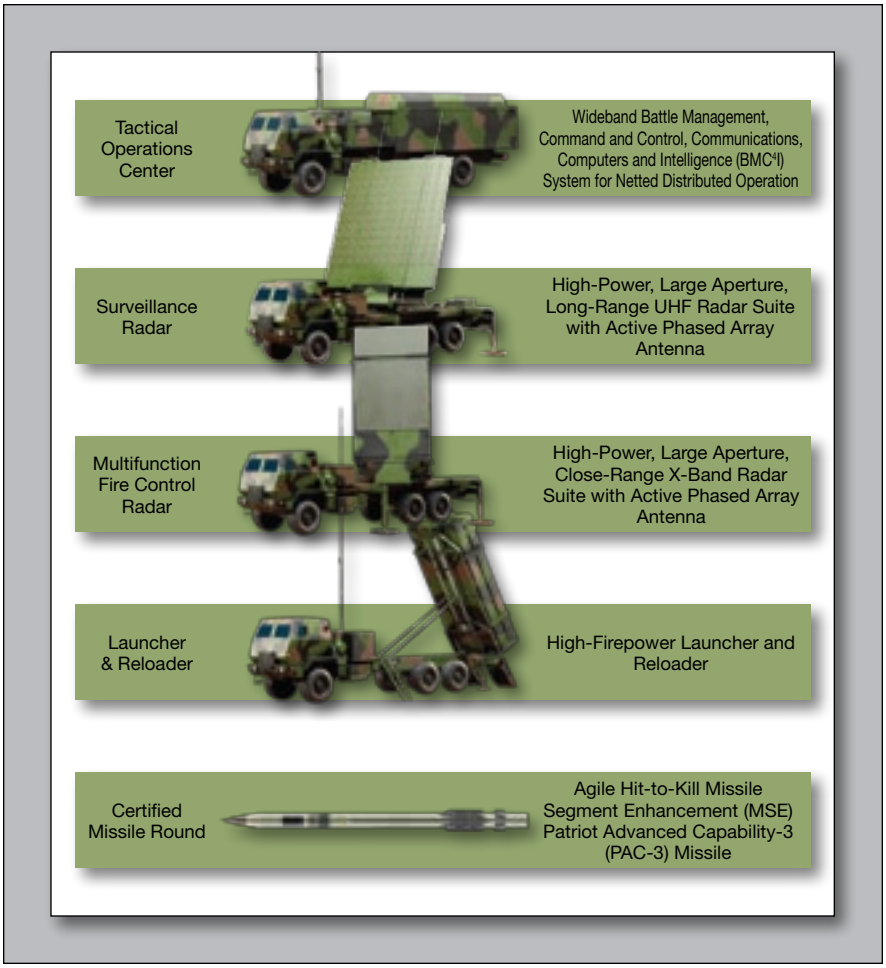
New Capabilities for the Warfighter. A more powerful Missile Segment Enhancement (MSE) variant of the hit-to-kill Patriot Advanced Capability 3 (PAC-3) missile is being incorporated into the MEADS system by MEADS International.

When completed, MEADS will provide capabilities well beyond any currently fielded AMD system. MEADS includes 360-degree surveillance and fire control sensors, high-firepower launchers and "plug-and-fight" battle management command and control abilities. The system will combine superior battlefield protection with flexibility, allowing it to protect maneuver forces and provide homeland defense against tactical ballistic missiles, cruise missiles, unmanned aerial vehicles and aircraft.

Testifying before the House Armed Services Committee Strategic Forces Subcommittee on 17 April, Lieutenant General Kevin T. Campbell, Commander of the US Army Space and Missile Defense Command/US Army Forces Strategic Command and Joint Functional Component Command, said, "MEADS, a cooperative development program with Germany and Italy, will provide a lighter, more deployable, maneuverable, lethal, network-centric AMD capability.

"The program also includes development of the PAC-3 MSE as the objective tri-national MEADS missile. The PAC-3 MSE is currently under development and will be integrated into the MEADS program. The MSE missile will provide a more agile and lethal interceptor that expands the engagement envelope of this system…."

Added Capabilities, Expanded Lethality. A key benefit of the MEADS plug-and-fight capability will be command and control over other AMD system elements through standardized interfaces. Germany, for example, plans to use a surface launched variant of its Infrared Imaging System—Tail/Thrust Vector Control (IRIS-T) air-to-air missile with MEADS, while the US Army is considering the Surface Launched Air-to-Air Medium-Range Missile (SLAAMRAM) as a secondary missile in the US MEADS configuration.



End Items of the Medium Extended Air Defense System

In the past, incorporating additional missiles or sensors into an AMD system would have been difficult, but MEADS will provide a unique ability to work with secondary missile systems, if selected by the participating countries, and to evolve as other capabilities are developed.

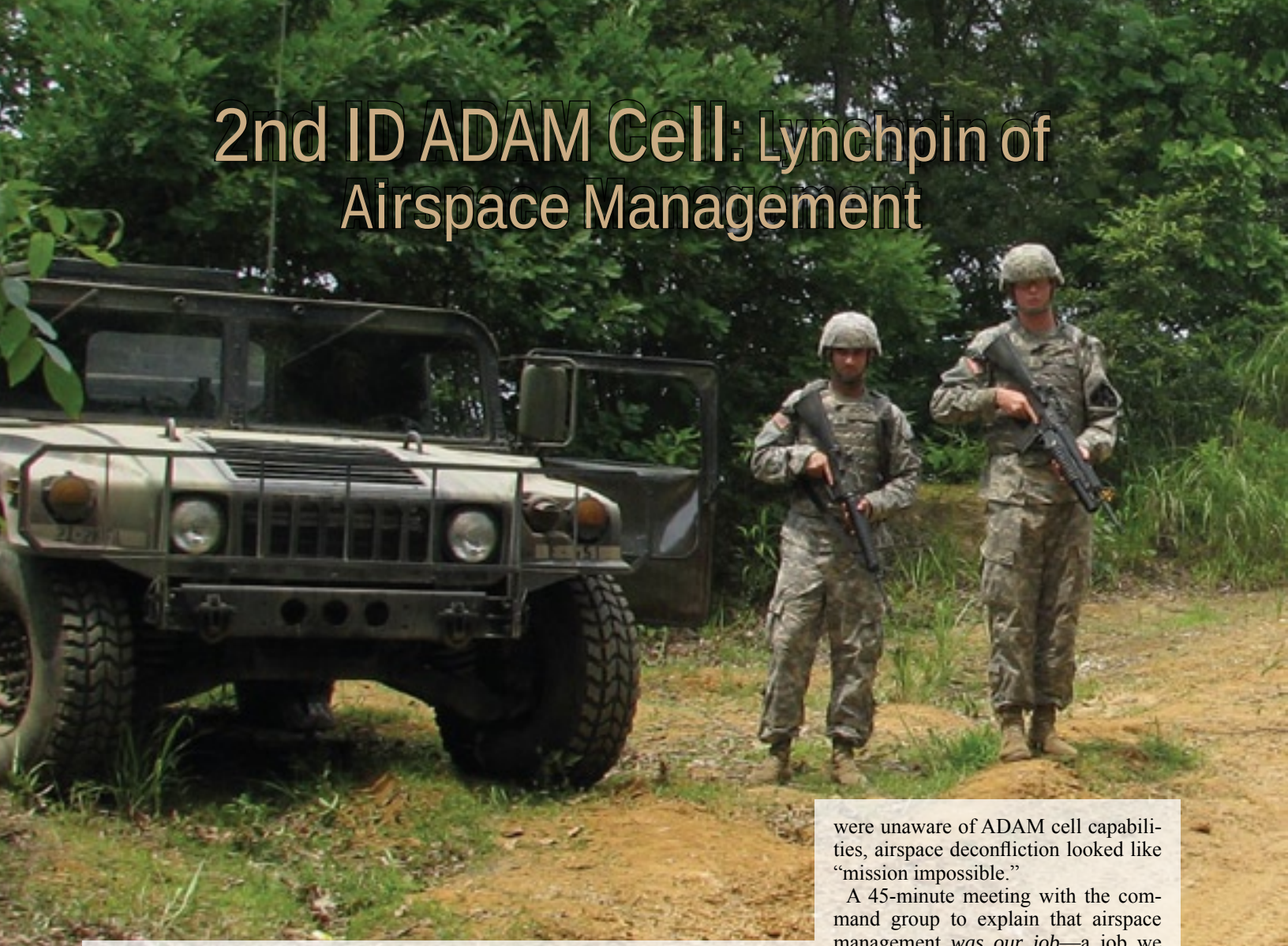
This flexibility was demonstrated in 2006 when the MEADS Steering Committee decided to upgrade the baseline PAC-3 missile used in the MEADS system, authorizing a move to the PAC-3 MSE version that currently is in development. The new interceptor increases the system's range and lethality over the baseline PAC-3, which was selected as the primary missile for MEADS when the design and development program began in 2004.

The MSE missile, under development by Lockheed Martin Missiles and Fire Control, is an even more powerful version of the combat-proven hit-to-kill missile now in production. It increases the engagement envelope and defended area by using more responsive control surfaces and a more powerful rocket motor.

"We are confident that this path [fielding MEADS] will provide our forces, allies, friends and our nation with the most capable air and missile defense system possible," General Campbell said in his testimony.

William C. "W.C." Wiese is the Communications Manager for MEADS International, the multinational joint venture—between Lockheed Martin and partner companies in Italy and Germany—that is developing the Medium-Extended Air Defense System (MEADS). His 36-year career at Lockheed Martin includes communications work on Patriot, Copperhead, strategic air defense and the Terminal Guidance Warhead for the Multiple-Launch Rocket System.

2nd ID ADAM Cell: Lynchpin of Airspace Management



By CPT Alexander B. Corby, ADA

The horror stories about brigade combat team (BCT) and division leaders being "virtually clueless" about air defense airspace management (ADAM) cells are *not* gross exaggerations. Because many leaders do not comprehend how the recently fielded ADAM cells function, they do not regard ADAM cells as particularly valuable assets.

The flipside of this is that the highly competent commanders and staff officers who run our BCTs and divisions regard the crowded airspace above contemporary battlefields as "a real nightmare." They are keenly aware of the need for effective airspace management and are desperate to achieve it.

But once these leaders understand how ADAM cells work and what the cells bring to the fight, their attitude toward ADAM cells rapidly change. That, at least, has been my experience as the air and missile defense (AMD) plans officer of an ADAM cell recently fielded with the 1st Heavy BCT (HBCT), 2nd Infantry Division.

"Lynchpin." When the ADAM cell for 1st HBCT first hit the ground in Korea, the cell was pegged as the "black sheep" of brigade headquarters. No one seemed to know exactly where we fit or what to do with us. Fortunately, the brigade commander, deputy commander, operations officer and executive officer were alert to the fixed-wing and rotary-wing threat, as well as the ballistic missile threat. They also appreciated the need to coordinate surface and naval fires to enable friendly aviation assets to operate above the battlefield.

They were counting on the ADAM cell to counter the enemy fixed- and rotary-wing threat while providing early warning with its six Sentinel radars—but were concerned about potential friendly fire incidents. In other words, they regarded airspace deconfliction as an imperative; they just didn't know how "make it happen." Because they were unaware of ADAM cell capabilities, airspace deconfliction looked like "mission impossible."

A 45-minute meeting with the command group to explain that airspace management *was our job*—a job we were confident we could handle—turned everything around. The command group's S-3 said they were amazed at our explanation of ADAM cell capabilities, functions and operations. In their eyes, we instantly became the "lynchpin" of airspace management.

At first during war games, Avengers engaged friendly aircraft that neglected to coordinate with E/1-43 through the ADAM cell. Needless to say, the aircraft pilots quickly learned to coordinate with the ADAM cell. Now, during war gaming, the brigade no longer resolves airspace management challenges by shoving the AMD piece aside.

Integration. Today, under the leadership of the brigade AMD officer, the ADAM cell holds almost half of the brigade S-3 slots, and people look to Air Defenders for airspace planning. Originally assigned to a small space in the S-3 shop, we recently moved into our own building, allowing us to train our Soldiers on the perishable airspace management and deconfliction skills

PFC Marcus Bell and PFC Jonathon Von Arb, E Battery, 1st Battalion, 43rd Air Defense Artillery (E/1-43 ADA), guard the entrance to a Sentinel radar site during an exercise to obtain a live short-range air defense radar picture and pass it to the air defense air management cell. (Photo by 1LT William Viegas, E/1-43 ADA)

in a garrison environment. To maintain the cell's combat readiness, the brigade leaders have ensured that all of the ADAM cell's fieldings and requirements are met.

Due to the urgency with which ADAM cells were created, trained and deployed, ADAM cell fielding "got off to a ragged start." The first ADAM cells trained and deployed to Iraq, Afghanistan and Germany with makeshift or provisional equipment. All things considered, they accomplished near miracles (See "Employing the Air Defense Airspace Management Cell," in the October-December 2006 edition of *Air Defense Artillery* online at **www.airdefenseartillery.com**). However, the deployment of ADAM cells that lacked the full-spectrum of "objective" capabilities created some confusion.

Since the first ADAM cells were deployed, tremendous progress has been made toward both achieving optimal ADAM cell configurations and in the training of ADAM cell officers, warrant officers and Soldiers. The Joint Firepower Course at Nellis Air Force Base, Las Vegas, Nevada, is instrumental in teaching how the Air Force, Army Aviation and fires communities work. However, ADAM cells are still new, and it is unrealistic to expect that newly deployed ADAM cells will be integrated seamlessly and effortlessly into their receiving organizations.

Lessons Learned. The initial ADAM cell deployments taught two important lessons. The first is that personnel assigned to ADAM cells must be well-versed in the full-spectrum of AMD operations, including joint fires and integration with the Air Force, Army Aviation and fires community. The second lesson is that personnel assigned to units with an ADAM cell must be capable of persuasively presenting ADAM cell capabilities to the combined arms team.

By adhering to these two valuable lessons, the future successes of ADAM cells virtually are assured; their mission capabilities simply are indispensible. If ADAM cell personnel and those who serve with them are system "campaign managers" as well as system operators, we can shorten the time to when ADAM cells are accepted, their capabilities understood and their personnel can operate at maximum potential.

Captain Alexander B. Corby, Air Defense Artillery (ADA), is the Battery Commander for E Battery, 1st Battalion, 43rd ADA (E/1-43 ADA) at Camp Casey in the Republic of Korea. He has served as the Air and Missile Defense Plans Officer for 1-7 ADA, 108th Brigade (Airborne), at Fort Bliss, Texas, and for the 1st Heavy Brigade Combat Team, Camp Hovey, Republic of Korea. He is a graduate of the US Military Academy at West Point, New York.

Air Defenders in Korea

The air defense airspace management (ADAM) cell of the 1st Heavy Brigade Combat Team (HBCT) is not the only group of Air Defenders "making a name for themselves" within the 2nd Infantry Division in the Republic of Korea. E Battery, 1st Battalion, 43rd Air Defense Artillery (E/1-43 ADA), 210th Fires Brigade, or *Los Diablos*, continue to serve, providing early warning and engagement of hostile fixed- and rotary-wing assets.

Air Defenders are essential to the division's wartime mission. The 210th Fires Brigade, or *Warrior Thunder* Brigade, is charged with the counterfire fight in the early stages of a conflict on the peninsula and is home to all Q-37 radar assets assigned to US forces in Korea.

The Q-37 radar serves an integral part within the counterfire fight for 210th Fires Brigade—so as goes the Q-37 radars, so goes the division's mission in Korea. It is for this reason that *Los Diablos* stand ready with their Avengers and Sentinel radars to ensure the safety of *Warrior Thunder* Soldiers, allowing them to complete their wartime mission.

The officers and senior NCOs of *Los Diablos* are serving a second role for the brigade within the planning and operations arena, which usually is addressed by the ADAM cell. However, until an ADAM cell is fielded with the unit, *Los Diablos* Soldiers have assumed this role to provide airspace deconfliction and management within the brigade's area of operations, minimizing the possibility of a fratricide incident or midair collision.

The Air Defenders of both 1st HBCT and 210th Fires Brigade continue to work hard as ambassadors of the air and missile defense community to ensure that maneuver commanders fully understand our capabilities and how we shape the area of operations. *Los Diablos* Soldiers stand ready, providing early warning and engagement of air-breathing threats and airspace management for the maneuver commanders, allowing them to maximize their capabilities and mass fires effectively when they close with and engage the enemy.

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Terminal High Altitude Area Defense (THAAD) is designed to defend US troops, allied forces, population centers and critical infrastructure against short- to intermediate-range ballistic missiles. (Photo courtesy of Lockheed Martin)

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