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Field Artillery

A JOINT MAGAZINE FOR US FIELD ARTILLERYMEN • MARCH-APRIL 2006

Urban Ops in a New Kind of War

An Interview with LtGen John F. Sattler, Commanding General of the joint and coalition force in the second battle of Fallujah, Iraq

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Front Cover: An M198 howitzer from M Battery, 4th Battalion, 14th Marines, on Camp Fallujah, Iraq, fires on carefully selected targets in Fallujah, 21 October 2004. During the second battle of Fallujah in November, M Battery was direct support to Regimental Combat Team 1 (RCT-1), 1st Marine Division. (Photo by LCpl Daniel J. Klein, Combat Camera, G-3)

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Modularity Update: Transforming the FA

The Field Artillery is transforming for the future, but our mission endures: provide all-weather, 24/7, responsive, effective fires in support of our ground forces. And in the Global War on Terrorism (GWOT), we execute that mission *daily*.

I continue to be *impressed* with the job our Field Artillerymen are doing in Operations Iraqi Freedom (OIF) and Enduring Freedom (OEF). They are doing what they do best as the *King of Battle*.

In his interview in this edition, Marine Lieutenant General John Sattler, commander of the coalition and joint forces in urban operations that swept the enemy out of Fallujah, Iraq, in November 2004 praised Marine and Army FA in support of his operations. He said, "We fired more than 6,000 Artillery rounds during the [10-plus day] battle. ... This is how good the Artillery was: the ground warriors were willing to call in artillery rounds 150 meters from themselves."

Our *incredible* Field Artillerymen "keep on, keeping on," firing literally thousands of rounds in Iraq and Afghanistan last year and continuing today. Let me give you just a few examples.

• Task Force 1st Battalion, 148th Field Artillery (TF 1-148 FA), Idaho Army National Guard (IDARNG), fired 1,455 155-mm rounds from its Paladins in OIF last year—illumination, close support and counterfire. This outstanding task force was deployed as part of the 116th Brigade Combat Team (BCT), 42nd Infantry Division, NYARNG, from December 2004 to December 2005. It was headquartered at Forward Operating Base (FOB) Warrior near Kirkuk.

• Soldiers of *Glory's Guns* fired just under 6,000 rounds in the Salah ad Din counterfire campaign in OIF. These talented 1-41 FA Redlegs, part of the 3rd Infantry Division, fired for both the 42nd Division and 101st Airborne Division (Air Assault)—Active Component (AC) and Reserve Component (RC) working together to secure freedom for Iraq's citizens.

• As of February 2006, all 105-mm and 155-mm artillery assets in Afghanistan had fired 7,000 rounds for operational purposes—as reported in an email by Major General William B. Caldwell IV, Commanding General of the 82nd Airborne Division. Task organized under the 173rd Airborne Brigade, TF *Gun Devil*, 3-319 Airborne FA Regiment (AFAR) (82nd Division), is responsible for arming, manning and fixing all fire support assets in Afghanistan and, in that capacity, works directly with Fires, Combined Joint Task Force 76 (CJTF-76).

But as General Caldwell reported, TF *Gun Devil's* mission in OEF is broader still. TF *Gun Devil* is a ground maneuver task force with its own area of operations (AO) and includes assigned maneuver and Romanian units. The task force has used fires aggressively in its own AO. In fact, TF *Gun Devil* refined a technique to first use indirect fires to interdict enemy movement, fix the enemy formation and then transition to aerial fires (rotary- and fixed-wing). The technique of using indirect fires immediately before employing aerial assets has allowed friendly forces to keep up the momentum as they pursue the fleeing enemy. On several occasions, TF *Gun Devil* has massed fires, both indirect and aerial, on enemy strongpoints in true joint and combined fighting.

General Caldwell concludes his email by saying, "If there is any unit deployed in this GWOT environment that has demonstrated its adaptability and versatility, it is TF *Gun Devil* ...."

I salute these amazing Field Artillerymen and others just like them firing everyday in support of Coalition Forces in GWOT. I have read numerous accounts of the versatility of Field Artillerymen serving in fires, maneuver and several other roles in Central Command (CENTCOM), and I am convinced the FA leads the way as "Pentathletes"—transforming not only our organizations and equipment, but also building Soldiers, Marines and leaders who are multi-capable and rapidly adaptable.

Transition to the Modular Force. As the Army embarks on its most sweeping transformation since World War II, we must ensure FA organizations remain ready and relevant today as we "build a bridge" to the future combat system (FCS) force. Unit conversions will not be without significant resourcing challenges, and the solutions may be less than optimal at first. But with Fort Sill and the Training and Doctrine Command (TRADOC) working together with Forces Command (FORSCOM) and the Department of the Army (DA), we will meet these challenges.

The Army leadership recognized at the outset of transformation that new designs would require modification but had to maintain solid, fundamental baselines. The guidance for the design teams was to provide organizations at the 80 percent solution level that could be adjusted and required little or no growth in personnel.

Our FA design team focused on transferring those functions the division artillery (Div Arty) performed to the new fire support cells (FSCs) in the BCT and maneuver battalion headquarters. ("FSC" is the doctrinal term replacing the "fires and effects cell," or "FEC," as of *Field Manual (Interim) 5-0.1 The Operations Process*, dated February 2006.) Other major changes were adding a fire support coordinator (FSCOORD)

lieutenant colonel to the BCT and consolidating the fire support teams (FISTs) into a platoon in the maneuver battalion. These changes allow the FSCOORD to oversee the training and certification of fire supporters who are so critical to the BCT's operations.

At the division level, we have asked that the FSCOORD in the division FCS be upgraded from O-5 to O-6. This will give the FSCOORD a peer relationship to work with the division's BCT commanders, again, helping to ensure Field Artillerymen are trained to standard and combat ready across the division.

The Army leadership selected the 3rd Infantry Division to be the first to convert to the modular force. One part of its conversion was the deactivation of the 3rd Div Arty in 2003, making its subordinate battalions fires battalions organic to the BCTs. The 3rd Infantry Division just redeployed from Iraq—we look forward to reports of lessons learned from these new fires battalions' experiences in GWOT.

In 2004, the 4th Infantry Div Arty at Fort Hood, Texas, converted into the Army's first fires brigade, the 4th Fires Brigade. The brigade transformed simultaneously with its preparation for deployment and currently is in Iraq. The 4th Fires Brigade's lessons learned in GWOT will help us refine our fires brigade design.

There is inherent goodness for the FA in the modular designs. The FA AC is increasing by seven battalions. This growth will enable us to reward more of our outstanding leaders with chances to command as lieutenant colonels and serve as battalion command sergeants major.

With this increase in AC battalions, we have reopened the M119 production line to provide enough of the towed 105-mm howitzers for the infantry BCTs (IBCTs). These new M119s also will replace many of the aged M102 howitzers in FA ARNG units.

We are continuing to transform FA units into the modular designs. To date, 18 FA battalions in the AC and six in the ARNG have reorganized into fires battalions.

2006 will continue to bring modular changes. This year, an additional 19 AC and 23 ARNG FA battalions will transform into fires battalions, and the 75th and 214th FA Brigades in the AC and 142nd FA Brigade in the ARNG will convert to the fires brigade design. DA G3 approved the modified tables of organization and equipment (MTOEs) for these units on 8 February; I expect them to be published in March. The remainder of our FA force will transition to modular designs by the end of FY08.

Mechanisms for Change. We currently have six force design updates (FDUs) that will affect the FA community. (An FDU, basically, is a request for change.) Most of the FDUs are at TRADOC for inclusion in the Modular Force Review.

• We have requested the addition of a counterfire operations section (COS) to the fires battalions in IBCTs and heavy BCTs (HBCTs), which is awaiting Mod Force Review. This FDU would add six Soldiers in a COS to analyze data from multiple sensors, develop targets and then integrate the targets into the fires battalion's fire plan.

• The most far-reaching FDU would affect our Stryker BCTs (SBCTs), which also is awaiting Mod Force Review. This FDU would add nine Soldiers to the SBCT fires battalion operations and S2 sections, improving their abilities to conduct 24-hour operations. It also would add a second fire direction center (FDC) and an additional platoon leader and platoon sergeant to each firing battery, allowing it to conduct platoon operations. The latter change is extremely important as our SBCT fires battalions transition to a 3x6 configuration (three batteries, each with six howitzers) as they field the 155-mm M777A1 lightweight towed howitzer with its digital fire control system (DFCS) in coming years.

• Another important FDU is the coding of the BCT deputy commanding officer (DCO) as an O-2A Officer Generalist. This FDU is in response to an issue raised by the 28th Infantry Division, PA ARNG. Coding the BCT DCO as O-2A would allow an FA officer to serve in this critical position in any type of BCT. This FDU currently is being staffed within TRADOC; if approved, it will go directly to DA for staffing Army-wide.

• Other FDUs include adding four FA tactical data systems operators to the division FSC, awaiting Mod Force Review; changing the rank of the division FSCOORD from lieutenant colonel to colonel (as already mentioned), which has FORSCOM and TRADOC concurrence and is being staffed in the DA G3; and adding a 40A Space Officer to the battlefield coordination detachment (BCD), awaiting Mod Force Review.

I will keep you posted on the resolution of these FDUs.

Equipment Transformation. The Army vision calls for the rapid infusion of enhanced capabilities as well as technologies from FCS development into the force. An experimental BCT (EBCT) will be activated in 2008 as a means to accelerate this infusion of capabilities and technologies. The EBCT will validate FCS capabilities for infusion into the BCTs as FCS "spin outs."

We also are working to ensure new equipment is fielded rapidly to Soldiers, especially those deployed in support of GWOT. The Profiler meteorological system and the M707 Knight with its fire support sensor system (FS^3) were fielded to the 3rd Infantry Division for its OIF deployment. The FS^3 provides

Task Force 1st Battalion, 148th Field Artillery (TF 1-148 FA), Idaho Army National Guard (IDARNG), fired 1,455 155-mm rounds from its Paladins in OIF last year—illumination, close support and counterfire.

Soldiers with better surveillance capabilities and target resolution at greatly increased ranges.

In an earlier column, I talked about fielding the *incredible* 155-mm Excalibur unitary precision-guided munition in CENTCOM. Excalibur's testing is on track, and the projectile is performing very well. In February, the testing team shot Excalibur with a live warhead at a 20-by-20-meter reinforced structure at a distance of nearly 19 kilometers. Impressively, the round impacted four meters from the center of the target.

Excalibur will undergo several critical tests in March which, if its excellent performance continues, will keep it on a fast track for fielding in theater. Its limited user test (LUT) currently is scheduled to begin in late July with the goal of fielding Excalibur in the First Quarter of FY07.

Reports about the guided multiple-launch rocket system (GMLRS) unitary rocket's effectiveness in urban operations in Iraq are *awesome*. A total of 30 GMLRS unitary rockets have been fired in OIF on five different targets. Two of the targets were in a dense urban area in a large city. Those two targets were destroyed, killing a number of insurgents with very limited collateral damage to the surrounding structures. Each rocket hit its intended target with less than a four-meter circular error probable (CEP).

The new GMLRS unitary rocket and existing Army tactical missile system (ATACMS) Block 1A quick-reaction unitary (QRU) missile, two surface-to-surface precision-guided munitions, now give the commander options for all-weather first-round effects from 15 to 270 kilometers in ongoing operations.

We have fielded Counter Rocket, Artillery, and Mortar (C-RAM) "sense and warn" capabilities to several FOBs within the CENTCOM area of responsibility (AOR). C-RAM provides Soldiers, Sailors, Airmen, Marines and civilians early warning of indirect fire attacks. This "system of systems" has brought together Army, Air Force and Marine Corps sensors and fused their data into a common operational picture (COP), allowing the commander to clear fires quickly to respond to enemy indirect fire attacks. A full sense, warn and intercept package has been fielded to one FOB in Iraq, providing an active protection system for key locations on the FOB.

Along with in-theater efforts, the C-RAM system of systems has been integrated into training at the National Training Center, Fort Irwin, California, starting with Rotation 06-04. In a short time, units have been able to master the C-RAM systems, employing them in counterinsurgency operations using both lethal and nonlethal counterstrike assets—a definite advantage for our units preparing to deploy in GWOT.

Doctrine. Significant changes in operational and organizational concepts require changes to our doctrine and tactics, techniques and procedures (TTPs). Currently, *FM 3-09.41 TTP for Fires and Effects for SBCT Operations* and *FMI 3-09.42 TTP for the Modular Fires Battalion* have been approved. We are working on *FM 3-09.23 TTP for the Modular Fires Battalion* and *FM 3-09.42 TTP for Fire Support for the BCT*. Readers can find links to these manuals on the Fires Knowledge Network (FKN) home page, part of Army Knowledge Online (AKO). We soon will begin work on *FM 3-09.24 TTP for the Fires Brigade*.

Conclusion. A primary means for us to stay abreast of transformation issues is the modularity video-teleconference (Mod VTC) conducted the second Wednesday of each month. The Mod VTC is a forum for units and agencies across the Army to exchange ideas, input and track issues, and update information about the issues and emerging or planned solutions.

To date, we have worked 64 issues and resolved 50 of them. Information on these Mod VTCs, to include slide packets and minutes, is posted on FKN. I encourage all leaders affected by modular issues to participate in these monthly VTCs and other Field Artillerymen to tap into the FKN information about the transforming FA.

Finally, Fort Sill is continuing to execute the Base Realignment and Closure (BRAC) Commission directives, transitioning to the Fires Center of Excellence (CoE) (vice the NetFires Center of Excellence, as previously reported). The Air Defense Artillery (ADA) Center and School and FA Center and School are well into planning for the "virtual stand up" of the Fires CoE on 1 June and the eventual physical relocation of ADA to Fort Sill. In those efforts, the leaders of Fort Sill and Fort Bliss have been working closely in monthly VTCs or face-to-face meetings.

I recently returned from a "Home-on-Home" conference at Fort Bliss for both transition teams. I am delighted to report that they worked as *one team* to solve problems and implement the BRAC directives in a spirit of absolute cooperation—I *applaud* them. The focus of my May-June column will be our plans for transitioning to the Fires CoE.

Change can be daunting, and we have a lot of change ongoing in the US military, Army and FA today. However, our highly skilled, committed, versatile and adaptable FA Soldiers and leaders continue to meet all challenges. Because of you, the Field Artillery remains the *King of Battle!*

FA-ADA Fires Seminar: 31 May – 1 June

The 2006 Fires Seminar will be held at the Reimer Conference Center in the Field Artillery School, Fort Sill, Oklahoma, from 31 May to 1 June. It will focus on two subject areas: establishing the Fires Center of Excellence (CoE) with the Field Artillery and Air Defense Artillery Schools at Fort Sill (including a ceremony to initiate the "virtual" Fires CoE) and the role of fires in the contemporary operational environment (including urban and counterinsurgency operations).

Invitees will be both Active and Reserve Components Army FA and ADA and Marine FA senior leaders and brigade-level and higher commanders and nominative command sergeants major; plus other Army leaders; fires representatives from the joint community; and allied representatives. Invitations will be sent via email in March.

As more information becomes available, it will be posted on the Fires Seminar portion of the Fort Sill Home Page: http://sill-www.army.mil, including an email address.

COL Anthony J. Puckett
Commander, 30th FA Regiment
Fort Sill, OK

Lieutenant General John F. Sattler, Commander of US Marine Forces, Central Command (CENTCOM), and Commanding General of I Marine Expeditionary Force (I MEF), Camp Pendleton, California

Second Battle of Fallujah—
Urban Operations in a New Kind of War

Interview by Patrecia Slayden Hollis

As Commanding General of I MEF, LtGen Sattler commanded the joint and coalition forces at the second Battle of Fallujah in Iraq from 8 to 20 November 2004. Fallujah is about 40 kilometers west of Baghdad on the Euphrates River and has a civilian population of about 250,000—only an estimated 1,500 of whom remained in the city during the battle. The battle was fought by a force of about 15,000, including US Marine, Army, Air Force and Navy units plus British and Iraqi units. The main force swept through the city from north to south down corridors. The forces cordoned the city and searched door-to-door, clearing buildings and engaging the enemy in the streets. This battle was reputedly the most fierce urban fighting for the Marines since the Battle of Hue City in Vietnam in 1968.

Q *What prompted the second Battle of Fallujah? Overall, how did you conduct operations, and how effective were they?*

A In the first battle of Fallujah in April 2004, we did not have an opportunity to shape the battle—only to deal with the enemy's activities. So we took the lessons learned, such as how the enemy used information operations [IO] to stop the battle, to set the stage for Fallujah II.

All the streets into the town were sealed by known thugs and murderers. I wouldn't call them "insurgents"—they were just a bunch of rogue thugs. But they controlled the city through intimidation.

The Iraqi Prime Minister Ayad Allawi determined that Fallujah had to be cleared to keep from exporting terrorism. Thugs could come to Fallujah; get their missions, ammunition and training; and move out to other parts of the country to execute their missions. The only way to stop these thugs was to clean them out.

Once General Rich Natonski [MajGen Richard F.], the 1st Marine Division Commander, and his staff did their troop-to-task analysis, they asked me for additional forces. So we brought together an operational planning team and worked out a holistic plan to cover ground combat, aviation and combat support, to include operations in Phase IV [after major combat operations], and the forces we'd need to execute the plan. The planning started about a month out. [See Figure 1 for the task organization of the joint and coalition forces for Operation Al Fajr, Fallujah II.]

The task organization was two Marine regimental combat teams [RCT-1 and RCT-7], each with two Marine battalions and an Army battalion; one of the Army battalions led the fight coming down from north to south. We also had six Iraqi battalions that fought very well.

In all, we had about 10,000 service members who actually went into Fallujah. We also had about 5,000 other Soldiers, Airmen and Sailors in support.

We did a number of feints from the south and east—made the enemy think he knew from which directions we were going to attack. It worked. Our intelligence showed the large number of road blocks, berms and indirect fire, sniper and fighting positions the enemy established in the south and along the east to defend the city. When the sun rose on the day of the battle, we had all of our forces north of the town, but it was too late for the enemy to shift his positions. [See Figure 2 on Page 6 for a map of Fallujah with the coalition and joint forces arrayed on the first day of the attack.]

During the fight, we ended up having to go house-to-house to clear every building because of the number of caches we found—more than 600 caches of weapons, ammunition, explosives and blasting caps. We also found a number of IED, improvised explosive device, factories and a couple of sites where they were making vehicle-borne IEDs.

We came across training camps with literature on how to operate different weapons systems, what tactics to use at ambush sites, etc. We also found torture chambers with cameras and computers used to make CDs for IO and intimidation.

We cleared somewhere between 15,000 and 20,000 buildings, most about three times. After the initial sweep, the thugs got in behind us, so we doubled back to attack south to north and cleared the same buildings again. Then after we secured Fallujah, we went through every building a final time to make sure we cleaned out all the caches.

We cordoned off the roads and built vehicle check points and entrance control points around the city. We cleared the *vermin* out and did not let them come back.

In all, we killed about 2,000 enemy thugs and took about 1,200 people into custody in Fallujah II, including a number of non-Iraqis. Every male of military age captured in Fallujah was at least vetted; many went to detention facilities. We

were careful how we handled the captured Iraqis—our goal was *not* to create more enemies in this process.

There were probably between 3,000 and 4,000 enemy in Fallujah II. Before the fight, some of the thug leaders inspired the masses and then ran as the citizens evacuated.

Q *What role did IO play before and during the battle of Fallujah, and how effective was it?*

A IO was *huge* in setting the conditions so that the international community, Muslim world and our own US citizens understood why this fight had to be fought, understood that the Prime Minister had asked us to go in and clean out Fallujah.

Weeks ahead of the fight, we shaped the battlespace by dropping leaflets inside the city with psychological messages and messages from the Prime Minister to the people of Fallujah. It was clear that if the intimidators were not turned in or if they did not leave the city of their own volition, the Prime Minister would not tolerate the situation in Fallujah.

The leaflets also told the people what was being "stolen" from them by the intimidators—projects to improve the city's sewage, water and schools that could not be initiated as long as thugs dominated the city, such as [Abu Musab] Al-Zarkawi. We even told them when the attack was coming, so they could leave

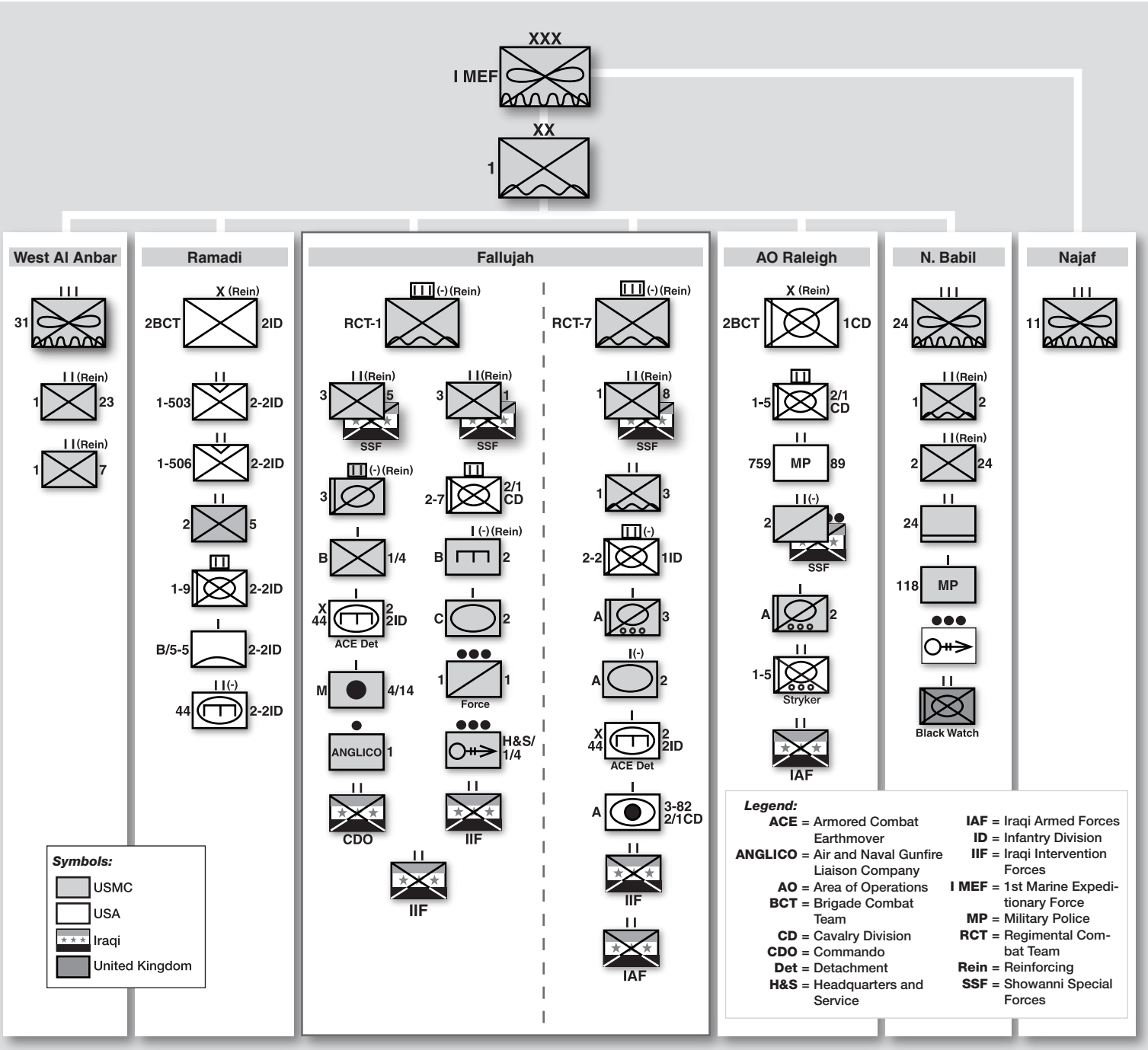


Figure 1: Operation Al Fajr Task Organization—Second Battle of Fallujah

the city, which really helped us avoid noncombatant injuries, keeping them down to almost zero.

The last thing we did before the attack was drop a leaflet that told the civilians who did not leave to stay inside their homes and lay down on the floor with their pamphlets in their hands as we entered the building. We took them north to holding places, in most cases, mosques. We brought buses and vehicles along behind the attack to escort them north.

Now, as you can imagine, when you back thugs "against a wall," they might play like they are noncombatants and try to exfiltrate out in our buses. For the most part, our Iraqi forces could see through that, so we took the thugs to detention facilities vice humanitarian assistance holding areas.

Although we worked hard to avoid damaging the city or causing noncombatant injuries during the battle, we still had to fight the fight; some damage was inevitable. So our IO campaign told the people about the reconstruction of Fallujah—that power grids and water purification were coming back online, schools were being remodeled, streets were being repaired and rubble was being taken out of the city. We constantly educated the people so they knew things were happening all over their city.

We didn't bring people back into Fallujah until 23 December. We began opening up the city by little districts, a total of 18, one at a time. This allowed us to get the rubble out and open services in the districts before the people returned.

We told the people how we were going to inspect their homes for damages, how claims could be adjudicated and that the process took time, and when the money would be coming.

Our IO campaign worked very well. It was time-consuming, and there was still some citizen angst about not being able to return to their homes except by designated districts.

IO set the conditions for minimal damage and injuries in the battlespace, allowed us to fight in Fallujah with the world understanding why it was necessary and helped decrease the citizens' anxiety during the city's attack, clean up and repopulation.

This is a new kind of war.

Q *How did you employ fire support in urban operations in Fallujah, and how effective was it? How important were your forward observers to the process?*

A Our fire support plan was based on the Marine Corps' combined arms doctrine and included fixed-wing aviation from the Marines, Air Force and Navy; Army and Marine helicopters, both attack and MEDEVAC [medical evacuation]; M198 [155-mm towed] and Paladin [155-mm self-propelled] artillery; and 81-mm and 60-mm mortars. Additionally, we created an inherently

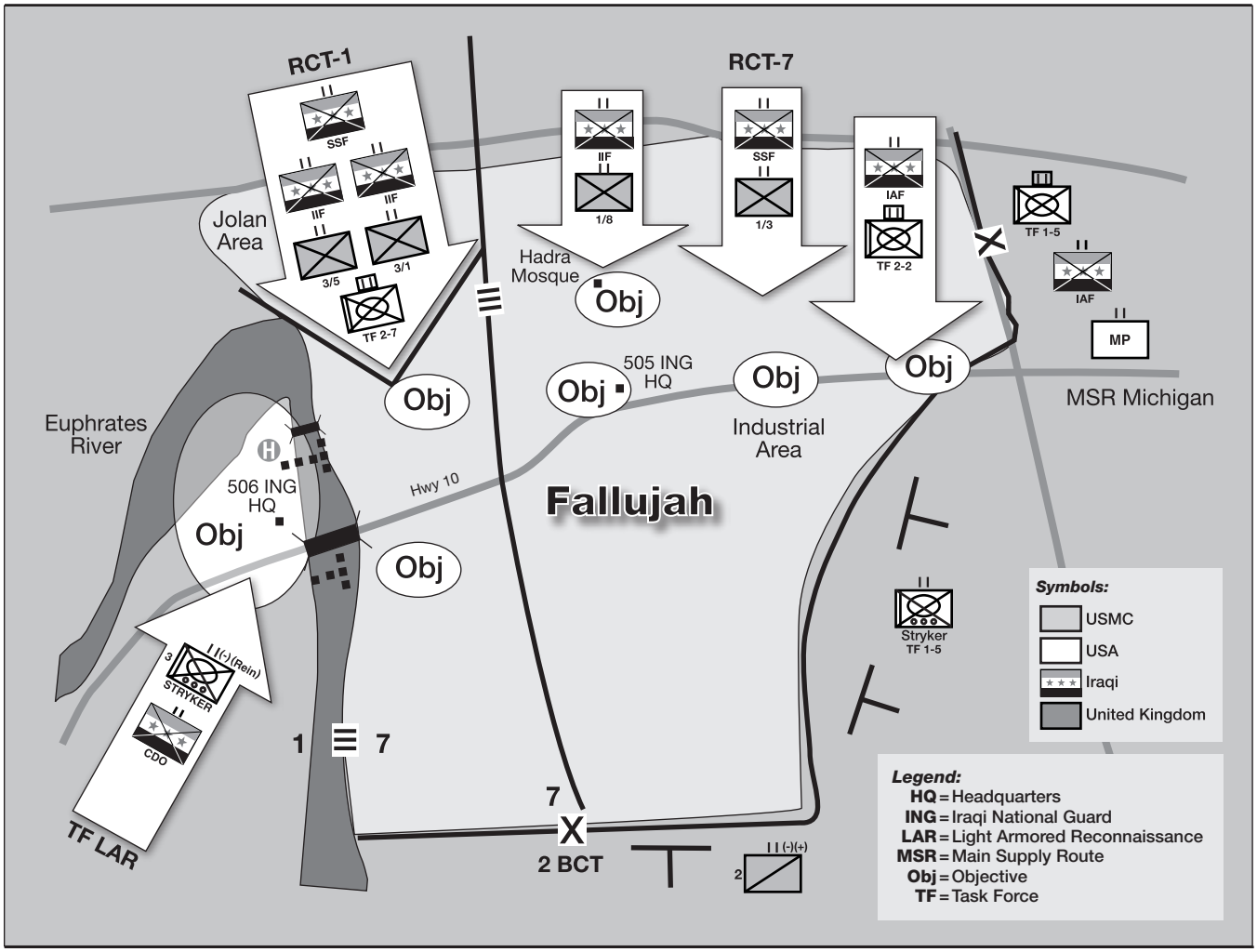


Figure 2: Operation Al Fajr on 8 November 2004—Attack Day

deconflicted battlespace to ensure we could employ our fire support systems as rapidly and effectively as possible.

We fired more than 6,000 artillery rounds during the battle. Every round was in response to enemy action—there were no prep fires before the attack, no harassing and interdicting fires. Every round fired was controlled by a forward observer [FO] or, in some cases, an unmanned aerial vehicle [UAV]. Our UAVs gave us the grid coordinates of an enemy position and allowed us to clear the area for fires and estimate collateral damage.

Our FOs were *critical*. To minimize damage and injuries to noncombatants, every round was on a specific target, often one tube firing at a time, and was observed. Based on the way we had laid out Fallujah's imagery with the buildings numbered, all FOs had the same imagery the pilots and personnel back at the combat operations center [COC] had.

So, obviously, the first round was very accurate. We often hit the exact building with Artillery, even though we were not using precision-guided artillery rounds. And if we didn't hit the target with the first round, we were able to walk the next round onto the target quickly.

This is how good the Artillery was: the ground warriors were willing to call in artillery rounds within 150 meters of themselves. One advantage of urban combat is friendlies can move back one row of buildings or get down below a wall to afford more protection from incoming rounds than in open terrain. We cleared danger close fires at 100 meters for the 81-mm mortars down to 50 meters for the 60-mm mortars.

So we didn't use any one system in isolation. We employed fire support in a cascading effect.

Q *How did you command and control your fire support?*

A RCT-1 and RCT-7 each had an Artillery battery in direct support [DS]. The Paladin battery [A Battery, 3rd Battalion, 82nd Field Artillery, (A/3-82 FA)] was DS to the 2nd BCT. Both the Paladin battery and a Marine M198 battery [M/4/14 Marines] were positioned at Camp Fallujah, some 22 kilometers southwest of Fallujah. [Also on Camp Fallujah and under the operational control of RCT-7 were two Paladins from 2/A/1-6 FA.] Now, that meant we couldn't mass a battalion's worth of Artillery on a target, but the enemy targets were no larger than a squad, so a battery could handle them.

The Paladins and M198s first response was counterbattery fire. Even though the enemy had limited indirect fire assets that were generally ineffective, we made sure that if he did fire, we found the point-of-origin and "rained steel" down on him.

The Marine and Army Artillery operated as one. They spoke the same language and had the same pride and professionalism. They ran their FDCs [fire direction centers] and FSCCs [fire support coordination centers] and cleared targets the same way. You could have taken Marine and Army Artillery officers and staff NCOs and interchanged them.

I attribute that incredible interoperability to the professionalism at Fort Sill. That's one hell of a school that teaches the Artillery to be the *King of Battle*—and it works.

Q *What did you learn about Artillery in urban operations?*

A If you have shared imagery and preplan as much as possible by knowing the coordinates of potential targets on that imagery, then the FOs and FDCs can hit the target, adjusting if they have to, to take out a target *very* rapidly.

We learned that UAVs can provide the coordinates required for Artillery as well as aviation fires.

If an Artillery round was the choice for the desired effects, an aviation crew flying in the area can use its Litening pod to provide the exact coordinates for the target. [The new Litening pod in many aircraft can display detailed imagery of the ground from, say, 26,000 feet in the air.] The crew also could see, for example, if another friendly unit was coming into the back side of that target, something an FO might not be able to see. Every part of the joint team played some unique role that made the whole more effective.

Another thing we learned was that on the front side of the attack, VT [variable time] fuzes were most effective because many of the enemy were outside on rooftops. But once we moved down into south Fallujah where we backed the thugs into a wall (2nd BCT had sealed the south) and the thugs became very determined, PT [point detonating] fuzes were more effective.

Q *In the Battle of Fallujah, could you have used precision-guided Artillery munitions, such as the 15- to 70-kilometer guided multiple-launch rocket system (GMLRS) unitary rocket to be fired by MLRS and the high-mobility artillery rocket system (HIMARS) (GMLRS now in theater) and the 35- to 40-kilometer 155-mm Excalibur unitary round (soon to be in theater)?*

A With GMLRS hitting rounds in theater and Excalibur hitting rounds in testing, both within four meters or less of their targets—*absolutely* I could have used them. They will be extremely useful in future conflicts. They give us all-weather, 24-hour, seven-day-a-week precision-guided capabilities. The sooner we can get them, the better.

Now, having said that, these incredible munitions will add to our capabilities, not replace any. They will not replace aviation with air-breathing pilots, not only dropping precision-guided munitions, but also providing situational awareness so the guys on the ground can prosecute the battle better.

And, our "dumb" Artillery rounds in the battle of Fallujah were pretty damn "smart," so we don't want to get rid of them. It isn't an either-or.

The ground warrior doesn't care if his fires come from tubes, rockets or aircraft, just as long as he gets what he needs and when he needs it. These two new munitions now mean he can have precision-guided fires *any* time.

Q *What unique TTP did you use to employ joint fires?*

A We employed what we called "keyhole CAS." Working with the CENTCOM [Central Command] CFACC [Coalition Force Air Component Commander], Lieutenant General Buchanan [Walter E., III], and the CENTCOM Commander, General John [P.] Abizaid, we built a stack of CAS. With rotary-wing aircraft operating at 5,000 feet and below and fixed-wing at 9,000 feet, we established four holding points for Air Force, Navy or Marine fixed-wing and Army or Marine helicopters. We had Cobra and Apache attack helicopters plus Blackhawks and CH-46s that flew MEDEVACs or resupply.

Army helicopters picked up wounded Marines and Marine helicopters picked up wounded Soldiers to take them to

Photo by SFC Johan Charles Van Boers, 55th Signal Company (Combat Camera)

SGT Mathew H. Lowry and SPC John L. Jackson, A/3-82 FA, 1st Cav Division, verify and load a round into a M109A6 howitzer during combat operations in Fallujah, 6 November 2004.

shock trauma centers for treatment, no matter if the medical facility was Marine or Army.

We built shared, detailed imagery of Fallujah; mensurated coordinates for certain key buildings on the imagery; and worked closely with CENTCOM's CAOC [Coalition Air Operations Center] in Qatar. So all joint pilots had the same keyhole CAS stack briefing and used the same reference points on their knee boards. The ground warriors understood the keyhole CAS stack along with the ANGLICOs [air naval gunfire liaison companies], FACs [forward air controllers] and JTACs [joint terminal attack controllers], and they all had the same imagery.

So when a building was mentioned as a target, everyone knew exactly which building it was, regardless of the uniform he wore or his role in the fight. If a Marine pilot in the stack said he did not have the right ordnance on board for a particular target, then an Air Force pilot could say he did and come out of the stack to take out the target.

Fallujah II was fought in a city five miles by five miles with 15,000 to 20,000 buildings that had about 10,000 Soldiers, Marines and Iraqis attacking north to south, some swinging east to west and some attacking back from south to north. Aviation, Artillery, mortars plus UAVs had to be deconflicted with their effects orchestrated to prevent fratricide, be most effective and limit collateral damage or injuries to noncombatants. All that had to happen in a fog of intense house-to-house combat for 10-plus days in a constrained urban environment.

We were about as joint as you can get. The young men and women who pulled all that off were *amazing*.

Q *Even though Fallujah II had excellent joint interoperability, what can we still improve?*

A We need to go one step further in our shared imagery and improve the downlinks from aviation and UAVs so the ground forces can see exactly what the pilots see on their Litening pod displays. We need Litening pods in all joint fixed-wing aircraft as well as rotary-wing and to push the pod's imagery down to all joint observers and ground forces responsible for clearing targets so they can just "click" on the target for an aviation attack.

Rover III does that. [It is a portable, receive-only terminal for sensor data from multiple airborne platforms. For example, it allows ground forces and observers to see the ground details pilots see on their Litening pod displays from 26,000 feet in the air.]

In Fallujah II, we did not have enough Rover III receivers, so we need more of them. Also, we need to modify our UAVs to feed their imagery down via Rover IIIs.

Rover III identifies the target as the enemy, clears the target of friendly forces and helps limit collateral damage. We would be able to execute all types of CAS more rapidly using Rover IIIs, and they are useful in urban terrain where the next row of buildings often obscures the observer's vision.

Q *Please describe your targeting process, both deliberate and reactive.*

A When we positively identified a target as valid, in deliberate targeting we estimated the collateral damage potential of executing that target. A weaponeer worked a detailed equation, taking into account the type and size of the target, size and effects of the weapon, etc., to come up with the estimated collateral damage. We then figured out how we could get that collateral damage down to zero—change the heading of the aircraft, size of the bomb, delay of the fuze, etc.

If the collateral damage was still high, then an authority in the chain of command had to determine if the target was important enough to risk the collateral damage.

The next step in the deliberate targeting process was to deconflict the target with friendly forces. We're never going to accept a friendly casualty on a deliberate target. We ensured the commander who owned the target's battlespace had cleared the target.

The last thing we did in counterinsurgency ops was to ask a series of questions. What are the unintended consequences of executing this target? Will we hand the enemy an IO opportunity or can he generate a false IO campaign because of it? (In one IO campaign, the enemy used old footage to show elderly men, women and children in the hospital, claiming they were injured by our forces in Fallujah II.)

Two months before the fight, we took down deliberate targets on a nightly basis: training camps, command and control nodes, meeting places for some of the high-value targets, etc. It took weeks to build some of those target folders before we actually decided we were going to take those targets down.

Now, in reactive targeting—when troops were in contact or if there was hostile intent—the junior commander on the ground could clear and execute the target. An example of "hostile intent" is when the enemy was setting up a mortar tube; the commander didn't have to wait until the enemy fired the tube to take it out.

If troops were in contact, the junior commander on the ground had the authority to engage a target to protect his forces. He positively identified the target and cleared it. Collateral damage was his call.

Now, the commander had to consider proportionality. In other words, he

couldn't throw a 2,000-pound bomb that could cause collateral damage on an enemy walking across a street with a rifle.

For either type of targeting, based on the fire support control measures that we employed and our keyhole stacked CAS, when a valid target appeared, we wanted to engage it in seconds or, worst case, in minutes.

Q *In the press, the US military has been criticized for knowing only how to "break things" and not being effective at Phase IV operations. How did you conduct Phase IV in Fallujah?*

A We had everything for Phase IV planned before we moved across the line of departure. We did not attack Fallujah's electrical power grid, water supply, railroad trestle, the two bridges going across the Euphrates River or the pump houses. Fallujah is below the Euphrates River, so if you blow the pump houses, it will flood like New Orleans.

Our civil-military operations team moved in behind the front line forces. While fighting was still going on, they cleaned and set up the governance center to give the people of Fallujah a voice in their city's reconstruction.

The Seabees also moved in behind the front lines with bulldozers and trucks picking up the rubble and litter on the streets. In a matter of days, we had tons of debris moved to a pre-approved site.

We also had contracts in place to pay Iraqis to pick up the rubble and take it to a central location and sweep the streets. This was a "two-fer." One, we put money in their pockets, and two, we gave them purpose—jobs enhancing their city.

We already knew where all the power grids were and who the electrical contractors would be. So as soon as an area was secure enough to start hanging wires on the poles to get the grids back up, we regridded the city in the sequence of districts we repopulated.

We brought in huge water containers, each with 13 spigots, that contractors refilled so the people would have access to fresh water.

We also estimated what it was going to cost and gave the amount to the Prime Minister so he would have x-million dollars available immediately for the residents to get their lives back on track.

Did we do it all right? Were we trained to do all the things we did? No. But we did a good job.

Phase IV needs to be more of an interagency process. The military has to be the lead at the beginning because it's still somewhat of a hostile environment. But somewhere along the line, this phase needs to morph from heavy military to 50-50 participation with other government agencies and then to the military in a supporting role.

As it stands in Iraq, the military rides Phase IV all the way through. The good news is our young men and women are adaptive and smart enough to figure it out. The bad news is they have to figure it out.

Q *How will fielding the lightweight 155-mm M777 howitzer enhance the fires capabilities of the Marine air ground task force (MAGTF)? The high-mobility artillery rocket system (HIMARS)? The expeditionary fire support system (EFSS)? [EFSS is a towed, rifled 120-mm mortar and is scheduled to begin fielding in the 10th Marines in late 2006 or early 2007.]*

A Because of its increased mobility, the lightweight 155, the triple seven, will displace more easily and be fire-capped [ready to fire] more rapidly in any area of operations. Also, in combination with the Excalibur unitary round that's coming out, it will provide *unbelievable* first-round precision fires, day or night, seven days a week. The same is true of HIMARS firing GMLRS unitary, giving us even greater range.

The fires triad coming into the force—the M777, HIMARS and EFSS—will complement our other mortars and aviation and give us seamless and continuous fires to prosecute battle 24/7 anywhere in the world.

Q *What message would you like to send Marine and Army Artillerymen stationed around the world?*

A You Artillerymen are very adaptable and versatile. In urban counterinsurgency operations in Fallujah II, sometimes the Artillery shaped and maneuver forces went in behind vice maneuver forces going in and the Artillery taking out targets in front of and around them. Sometimes maneuver supported fires, and other times fires supported maneuver.

In counterinsurgency operations in Iraq, some Artillery units operate as maneuver or MP units and conduct civil-military operations, information operations and other nontraditional missions. With your intelligence, flexibility and adaptability, you can contribute all across the spectrum, from Phase I through Phase IV, in any type of operation, but especially in counterinsurgency operations.

Lieutenant General John F. Sattler has commanded the Marine Forces Central Command (CENTCOM) since August 2005 and the I Marine Expeditionary Force (I MEF) at Camp Pendleton, California, since June 2004. As the I MEF Commanding Officer, he deployed to Iraq and commanded the joint and coalition forces in the Battle of Fallujah II in November 2004. He also served as Director of Operations for CENTCOM and, before that, Commander of the Combined Joint Task Force-Horn of Africa. He commanded the 2nd Marine Division at Camp Lejeune, North Carolina, the same division in which he served as Assistant Division Commander and Commanding Officer of the 2nd Marine Regiment. Among other tours, in the J-34, he was the Deputy Director of Operations (Combating Terrorism) and in an earlier tour, in the J-3 as a Ground Officer for Operation Solid Shield, both on the Joint Staff at the Pentagon.

(Left to right) LTG Abdul Qater, CG of the Iraqi Army Forces; LtGen John Sattler, CG of I MEF; and Col Craig A. Tucker, CO of Regimental Combat Team 7, discuss operations during Fallujah II.

NLOS Cannon:
Meeting the Demands of Future Combat

By Major Vincent J. Tolbert, AC

When Secretary of Defense Donald Rumsfeld terminated the Crusader 155-mm self-propelled howitzer program in May 2002, he told the Army to accelerate development of the future combat system (FCS) cannon, properly known as the non-line-of-sight cannon (NLOS-C). He provided funds saved with the termination of Crusader to develop an FCS cannon to support the objective force (2002 US Army Field Artillery Center and Fort Sill (USAFACFS) Annual Command History (ACH) Pages 61 and 80).

Projected for fielding in 2014, the NLOS-C will give the brigade combat team (BCT) commander unprecedented responsiveness and lethality. It will be networked for rapid target execution and situational awareness, have extended-range targeting and be able to attack point and area targets precisely using a suite of munitions that include special purpose capabilities—for example, the Excalibur suite of precision-guided munitions.

NLOS-C will provide sustained fires for close support and destructive fires for tactical standoff engagements. It is being designed primarily to support the FCS combined arms battalions (CABs) and their subordinate units in concert with line-of-sight (LOS), beyond-line-of-sight (BLOS) and external and joint NLOS capabilities.

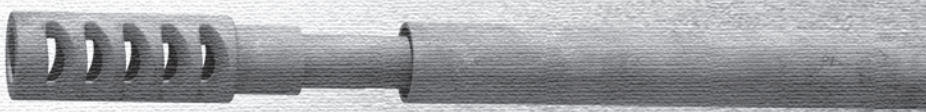
NLOS will be flexible—able to change its effects round-by-round and mission-by-mission, respond rapidly to calls-for-fire with its networking and high rate of fire, and provide a variety of effects on demand. The cannon will be able to move rapidly, stop quickly and deliver lethal first-round effects on target in record time.

Like Crusader, the NLOS-C will be capable of multiple round, simultaneous impact (MRSI). One cannon will be able to fire a series of rounds at different tube elevations quickly enough to have rounds impact simultaneously on a single target—a one-gun massing of fires. Coupled with the NLOS-C's superior rate of fire, MRSI will allow the cannon to provide record effects on target from fewer systems.

System Characteristics. The NLOS-C is one of eight FCS manned ground vehicles. Its operation will resemble the operations of all other FCS manned ground vehicles. Common features are the battle command system (BCS); planning, training and communications software; maintenance parts and procedures; water generation; resupply implementation; and others.

Chassis. Using a common chassis, the NLOS-C will have the advanced mobility of the FCS. The chassis will boast a suspension able to relatively smoothly traverse rough terrain at speeds of more than 50 kilometers per hour. For the first time in recent history, the cannon will enjoy the same mobility as the supported force.

The common chassis will feature reduced fuel consumption. Through a combination of engine and hybrid electrical advancements, the FCS will be able to travel hundreds of kilometers on its onboard fuel capacity.



Ammunition Handling System. The tasks of manually handling projectiles, powder charges and a rope lanyard to fire each round will be things of the past. In the NLOS-C, ammunition handling and firing will be automated. The process will include networking, all-electric drives, robotics and a laser igniter—all of which are more efficient, faster and less labor-intensive.

Tube Caliber. The NLOS-C will have a 155-mm, Zone 4, 38-caliber cannon. In May 2004, the Army and Field Artillery made a key decision on the caliber of the NLOS-C. Based on careful analysis, they opted for a 38-caliber 155-mm howitzer. The 155-mm howitzer tube was 58 percent more effective against personnel targets and 82 percent more effective against materiel targets than the 105-mm tube, also under consideration.

The Army and Field Artillery selected the 38-caliber tube over the longer 39-caliber tube. The 38-caliber tube trades the 39-caliber tube's additional four kilometers of range (using the M549 rocket-assisted projectile) but saves 1,367 pounds. With the weight savings, NLOS-C will be C-130-deployable with about 25 percent of its basic load of ammunition and still will satisfy the NLOS-C operational requirements.

Munitions. The NLOS-C will be able to fire the current suite of 155-mm ammunition and all developing 155-mm munitions. It truly will provide overmatching fires when it fires the future munitions.

Rate of Fire. NLOS-C will have a rate-of-fire of six rounds per minute sustainable for all missions in its typical combat environment. When moving, it will be able to respond to a fire order with the first round fired within 20 seconds of the vehicle's stopping. The howitzer will carry 24 complete rounds on board.

Resupply. One of the major concerns of any artillery piece is the amount of time it takes to resupply it. Throughout the world, artillery pieces are resupplied by hand in a time-consuming, manpower-intensive exercise.

An M109A6 Paladin crew loads its howitzer with a "man-in-the-loop" at the rate of one round per minute, making standard resupply last the bulk of an hour. The reload time can be longer in less than ideal conditions: at night, while wearing mission-oriented protective posture (MOPP) gear, in extremely cold weather gear or in wet/icy conditions.

The NLOS-C automated resupply will allow the cannon to rearm completely in

less than 12 minutes. When the NLOS-C transitioned into the FCS program it adopted the FCS resupply operational requirements. Within this operational construct, a resupply capability utilizing multi-role resupply "modules" is envisioned for the FCS brigade combat teams (FCS BCT) rather than a specific resupply vehicle for individual vehicles. In effect, the resupply function has been assumed by other assets within the FCS BCT.

Projectile Tracking System (PTS). PTS dramatically improves the accuracy of munitions fired from the cannon. Consisting of a narrow beam radar and detector, it tracks projectiles and compares "should hit" to "did hit" target locations before the round completes its trajectory. With this information, the cannon will be able to adjust the firing solution continually to achieve an optimum aim point in every fire mission.

This adjustment will occur round-to-round and dramatically improve the efficacy of the cannon's fires. Especially at longer ranges, PTS will result in a range and deflection probable error (PE) of 33 to 50 percent better (less) than Paladin.

When combined with improved sensors for targeting and modern munitions, PTS will ensure precision effects accuracy, even at the extreme edge of the cannon's range. PTS is a mature technology that does not add significantly to the weight of the cannon.

Crew Cockpit. Crusader spent much of its effort on optimizing the crew interfaces and operating areas. The result was a cockpit for the crew that facilitated the tactical employment of the howitzer in sustained operations. The cockpit abilities are largely independent of the type of ground combat vehicle it is located in, so this technology will be used across the FCS variants.

Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C^4ISR). The NLOS-C fires will be enabled by networked fires. (See the article "Networked Fires" by Colonel John L. Haithcock, Jr., in the January-February edition.)

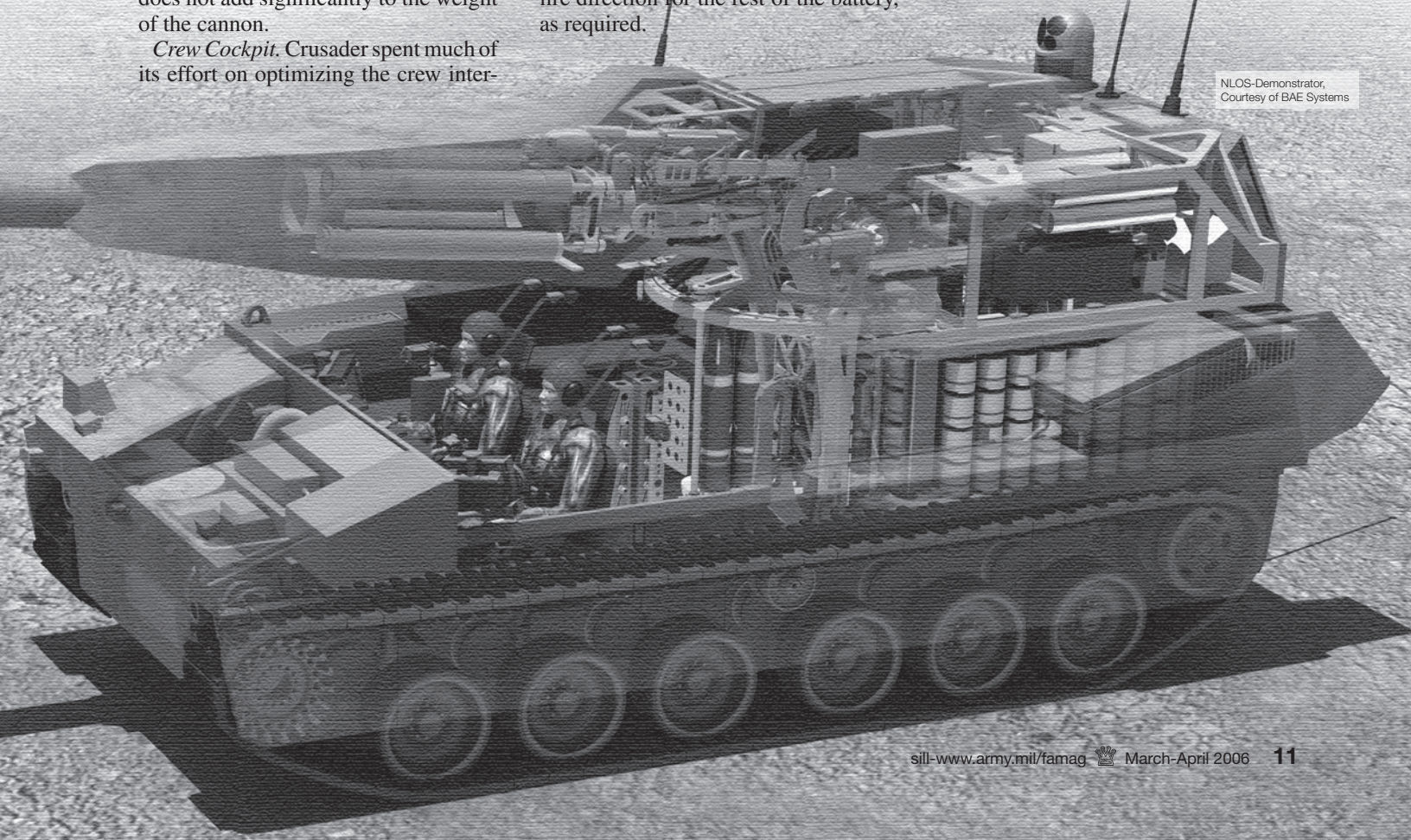
Integrated into NLOS-C's software, networked fires will exploit technological advances and combine them with new concepts in controlling fires. This will enable the force to link a target with a shooter in real-time, adjust fires allocations dynamically, and assess and reassess target status and damage while reducing the chances of fratricide or collateral damage. The results of networked fires will be the best pairing of effects and targets at the right time in support of the commander.

NLOS-C will receive and compute fire missions from all fielded and developmental target acquisition sources and command and control systems. Each NLOS-C will be able to compute its own firing data and provide limited tactical fire direction for the rest of the battery, as required.

Survivability. In terms of survivability, the NLOS-C's composite armor around the crew is substantially better than Paladin's. An active protection system (APS) will protect the crew from rocket-propelled grenades (RPGs), anti-armor missiles and tank-fired high energy anti-tank (HEAT) rounds. The FCS BCS will alert adjacent FCS platforms to an enemy threat, enabling cooperative responses to threats in their midst.

Also, the NLOS-C will have a crew-served weapon for close combat that will be able to engage stationary or moving targets up to 1,500 meters away. The primary candidate is the objective crew-served weapon, but others are being considered, such as a modified M2 .50-caliber machine gun.

The FCS program uses a holistic approach to minimize exposure to threat systems. For example, it first will use its common operational picture (COP) and employ tactics to try to avoid encountering an overmatching system. Should it encounter enemy forces, it will try to avoid detection and acquisition by managing its thermal, visible and acoustic signature. Should it be attacked, it will try to avoid a hit or penetration through its APS and composite armor. And should it be hit, it will try to avoid being killed through redundant systems and smart placement of critical systems.



NLOS-Demonstrator, Courtesy of BAE Systems

FCS vehicles will have a series of sensors for situational awareness and to navigate, detect and engage threats. The sensors will be both passive and active, cover infrared and visible light spectrums, and use a multifunctional radome to detect obscured or hidden vehicles and personnel. The NLOS-C crew will be able to use the sensors for cueing (alerting the crew to a potential target) and targeting (determining an enemy's location to within 25 meters).

In effect, when the future force BCT is deployed, any FCS platform will be able to locate a threat accurately enough to respond with a variety of precision options as long as the threat is within range of its sensor. Future enhancements will allow FCS vehicles automatically to recognize and categorize targets detected by their sensors and share the information with other FCS vehicles.

Other Technologies. The NLOS-C will benefit from several technologies matured under the Crusader program. This includes the laser ignition system for the propellant, embedded training, drive-by-wire technologies and a real-time common operating system for the manned ground vehicle system.

NLOS-C will use the titanium power generation and control systems that were optimized for Crusader. The NLOS-C also will use a 15-inch band track, a one-piece reinforced rubber track that will be used throughout the FCS family of vehicles. Potentially, it will make the vehicles lighter than comparative wheeled systems.

By taking advantage of technologies developed in the Crusader program, the NLOS-C developmental timeline is shorter.

Testing and Fielding for the NLOS-C. The NLOS-demonstrator, a prototype NLOS-C, is being tested at Yuma Proving Ground, Arizona. It features a modified XM777 155-mm towed howitzer tube mounted on a platform, a fully automated ammunition loading system and a magazine that can hold 24 100-pound projectiles. The platform uses an advanced band-track system and is propelled by a hybrid electric-diesel engine to provide improved mobility performance and reduce fuel consumption.

In August 2003, the NLOS-demonstrator fired its first round. Two months later in October 2003, the NLOS-demonstrator completed four, five-round missions at six rounds per minute and later finished several other missions at a slower rate of fire. By the end of October 2003, the NLOS-demonstrator had fired 140 rounds. To date the NLOS-demonstrator has fired more than 1,700 rounds.

Congress directed that the Army field NLOS-C in 2010 as part of the FCS overall fielding and to develop NLOS-C independent of the other FCS variants if they could not achieve the 2010 fielding. The Army is committed to developing and fielding the NLOS-C as part of an integrated FCS strategy while meeting Congressional intent by delivering eight prototypes starting in 2008. The NLOS-C prototypes will lead the development of the manned ground vehicle fleet with early testing and risk mitigation and ensure the NLOS-C development is synchronized with FCS manned ground vehicle development as well as support the fielding of the NLOS-C funded vehicles in 2010.

With the fielding of the NLOS-C, the FA will have a 155-mm FCS that is more survivable to support an FCS-based Army with faster, more lethal fires that impact with more precision and with multiple options for effects at greater ranges. It will be networked for targeting and situational awareness and have automated firing and resupply. In short, it will give the future BCT commander the all-weather, responsive fires option he needs to win in future conflicts.

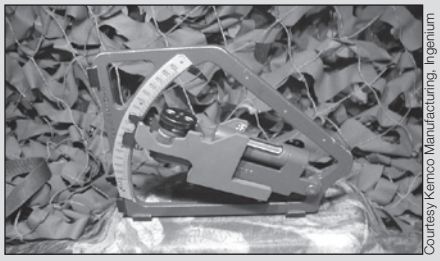
Major Vincent J. Tolbert, Acquisition Corps (AC), is the Non-Line-of-Sight Cannon (NLOS-C) Project Officer in the Training and Doctrine Command (TRADOC) Systems Manager Cannons (TSM Cannons) at Fort Sill, Oklahoma. He also was the Test Officer for the Limited Users Test for the Mobile Gun System (MGS) in TSM Tanks, Fort Knox, Kentucky. He served as the Assistant S3 and Commander of Service Battery in the 3rd Battalion, 29th Field Artillery, at Fort Carson, Colorado, part of the 4th Infantry Division. For Operation Iraqi Freedom, he deployed from January to July 2003 as part of the Fire Support Element (FSE) of the Deep Operations Coordination Cell (DOCC) in the Coalition Forces Land Component Command (CFLCC), Third Army, in Kuwait. In the DOCC, he was responsible for the execution of time-sensitive targets (TSTs).

New Gunner's Quadrant Lighting Kit

The new lighting kit for the M1A1 and M1A2 gunner's quadrants is designed for use in the 105-mm M102 and M119 howitzers, the 155-mm M198 and M777 howitzers and mortars. This kit easily attaches to the bottom of the gunner's quadrant allowing the Soldier to read the azimuth and elevation scales, micrometer and level vial in the dark.

The lighting kit illumination wavelength is between 550 to 650 nanometers to maintain light discipline for night operations. Until now, the Soldier read the instrument with the aid of a flashlight held by another Soldier, potentially compromising light discipline.

The unit is powered by two CR2450-sized three-volt lithium batteries available through either the Defense Logistics



Courtesy Kemco Manufacturing, Ingenium

Agency (DLA) supply system or local discount stores. The kit has an automatic shutoff after being activated for one minute, extending the battery's life. For example, if the lighting kit is inadvertently placed in the M82 gunner's quadrant carrying case while in the "on" position, it will shut off after one minute. Battery life is estimated at two years.

The gunner's quadrant lighting kit has been field-tested at Fort Campbell, Kentucky, by Headquarters Service Battery, 1st Battalion, 320th Field Artillery, 101st Airborne Division (Air Assault), and at Fort Sill, Oklahoma, by the USMC Field Artillery Chief. The kit performed very well.

The gunner's quadrant lighting kit is available for purchase through the DLA via NSN 1290-01-531-3062 or with a government credit card directly from the kit's manufacturer, Ingenium's Kemco Manufacturing Division, using the company's website: www.kemcomfg.com. Delivery takes eight to 10 weeks after receipt of the order.

MAJ Corey B. Chassé, FA
Chief, Current Cannons
TSM Cannon, Fort Sill, OK

TF Geronimo COLT in OEF Thwarts Attacks: an FO's *Dream*

While operating in the austere mountainous border region of southern Khowst Province, Afghanistan, the Combat Observation Lasing Team (COLT) of Task Force Geronimo, 1st Battalion, 501st Parachute Infantry Regiment, thwarted attacks on a border checkpoint and, using the fires of M119A2 howitzers and Marine aviation, neutralized the enemy. The COLT leaders—Staff Sergeant (SSG) Jesse J. Occhino, SSG Brandon E. Thompson and Specialist (SPC) David A. Larson—accomplished their core combat task, defining the continuing relevance of cannon artillery in Operation Enduring Freedom (OEF).

The Task Force Geronimo Combat Observation Lasing Team (COLT) and C^2 element was (left to right) B Battery, 377th Parachute Field Artillery Regiment Soldiers SSG Jesse Occhino, SPC David Larson, SSG Brandon Thompson and CPT Shane Morgan.

On 28 May 2004, two platoons of four 105-mm howitzers from B Battery (*Eagle Battery*), 377th Parachute Field Artillery Regiment (B/377 PFAR), and TF Geronimo's COLT were tasked to support the Khowst Provincial Forces positioned on a border checkpoint. During their mounted movement and before reaching the preplanned position area for artillery (PAA), all convoy elements saw a heavy volume of enemy indirect fires accurately impacting to their south, precisely within the border checkpoint they were tasked to support.

After conducting an immediate halt, or "hip-shoot," to establish an Artillery firing capability, many *Eagle Battery* Artillerymen heard SSG Occhino say, "Let's get on top of the border checkpoint now; we will make the difference; this is our job. If we move up to that border checkpoint, we can pinpoint the enemy launch sites and counterfire!"

Shortly thereafter, the TF tactical operations center (TOC) issued a hasty fragmentary order (FRAGO) to the battery commander approving the movement of a small element to collocate with Khowst Provincial Forces on the border checkpoint. The fire team-sized element began to move immediately with low signature to link up with Afghan forces and assess the situation at the checkpoint.

The element consisted of the two-man COLT, battery gunnery sergeant and battery commander for command and control (C^2). They had to clear all fires and deconflict airspace. Cannon artillery in position, ready to fire and laid on a priority target included four M119A2 howitzers with the full range of 105-mm munitions. The conditions were set to facilitate rapid counterstrike operations and allow SSG Occhino to deliver on his promise to "make the difference."

At 290429ZULU May 2004, the border checkpoint received a very accurate rocket attack for the fifth day. Coinciding with multiple rockets impacting within the checkpoint and ranging from 25 to 75 meters of their position, SSG Occhino flawlessly executed his battle drill and moved under enemy indirect fire to best position his element. In turn, SSG Occhino and SSG Thompson (battery gunnery sergeant), who were armed with multiband inter/intra team radios (MBITRs), binoculars, a static ground vehicular laser locater designator (G/VLLD) and an LH-41C handheld laser rangefinder, began the first of many calls-for-fire. The calls were streamlined into *Eagle Battery's* fire direction center (FDC).

Tactics, techniques and procedures (TTPs) included preplanned priority targets and shift-from-known-point missions that already were lased and computed by the FDC. Establishing an informal airspace coordination area (ACA) with lateral separation and real-time updates to shift the gun-target line, as necessary, allowed the artillery and attack aviation to mass fires on the enemy's firing positions.

After several hours of two-way artillery and attack aviation fires against a highly skilled enemy force, TF Geronimo forces neutralized the threat.

The TF delivered 53 artillery high-explosive (HE) munitions and controlled the use of many attack aviation munitions. Upon sending his end-of-mission target transmission to the FDC and receiving his battle damage assessment (BDA) from the Super-Cobra helicopter pilots, SSG Occhino stated "Wow...that was a forward observer's dream!"

For about a week before *Eagle Battery* and the TF's COLT arrived, the checkpoint had received more than 100 107-mm and 122-mm rocket attacks against which the Khowst Provincial Forces were defenseless. In short, the Afghan Khowst Provincial Force soldiers did not have the benefit of the extended range of cannon artillery. Moreover, the Khowst Provincial Forces' frustration was amplified by the fact they often could observe the enemy launch sites but could not strike them. On 29 May, things changed.

Performing as joint fires observers (JFOs), the COLT integrated *Eagle Battery* howitzers with the massed effects of Marine Corps attack aviation and facilitated the decisive engagement and defeat of hostile enemy forces. JFOs, 105-mm cannons and attack aviation made the difference in this fight, and in turn, enabled SSG Jesse Occhino, SSG Brandon Thompson and SPC David Larson to deliver on their promise.

MAJ Shane P. Morgan, FA
Former Commander, B/377 PFAR
TF Geronimo, OEF
June 2003-August 2004

FA TOC as a Base Defense Operations Center in OIF

By Sergeant First Class Robert M. Castillo

The Field Artillery (FA) tactical operations center (TOC) always has been a source of pride for most direct support (DS) battalions. In many instances, it has defined the commander's and his staff's effectiveness to plan and direct his units in the heat of battle.

In days past, the TOC served as the nerve cell for fighting an enemy with a distinct order of battle or fighting a fictitious counterfire battle against Kasnovian 2S-19 cannons and BM-21 rocket launchers. However in the past few years, the introduction of the forward operating base (FOB) has transformed many of our DS TOCs into base defense operations centers (BDOCs). In Operation Iraqi Freedom (OIF) III, many Artillerymen have the mission of establishing and maintaining BDOCs to support combat operations in theater.

This article defines the role of the BDOC; provides a composite look at current OIF BDOCs and their tactics, techniques and procedures (TTPs); and examines how to transform an FA TOC into a BDOC.

BDOC Employment Options. The BDOCs in theater have been employed in several ways; however, for the sake of brevity, I will discuss only two methods of BDOC employment.

The first employment option is the FOB as a stand-alone operations center with the FOB's defense as its primary responsibility. The BDOC and its staff can focus on base operations and assume responsibility for manning and sustaining FOB towers, observations points (OPs), entry control points, perimeter patrols, individual search areas for local nationals and any surveillance equipment or early warning systems located on the FOB.

The stand-alone BDOC can be manned by a battalion-level TOC with only a few additions, including medical support Soldiers, radio telephone operators (RTOs) and specialty Soldiers to man any surveillance equipment or early warning system. The stand-alone BDOC also can include a small support cell to assume responsibility for supplying power to the FOB, managing sanitation issues, controlling local nationals who work on the FOB and managing daily FOB work details or tasking needs.

Option two involves meshing the BDOC with a TOC (battalion or brigade) that is responsible for not only the FOB, but the area of operations (AO) outside the FOB. This option allows the TOC to assume the duties and responsibilities of the BDOC; however,

SGT Michael Fiorella, B Battery, 4th Battallion, 320th Field Artillery, 101st Airborne Division, provides security in Baghdad on 9 January 2005.

Photo by SPC Teddy Wade, 55th Combat Camera

For Current Operations, provide—

- Threat analysis of the forward operating base (FOB) and surrounding areas.
- Predicted analysis, based on previous indirect fire attacks in which directed named areas of interest (NAIs) are incorporated or adjusted.
- Human intelligence (HUMINT) analysis of local tribes, insurgent leaders or groups.
- Daily situation reports (SITREPs) of attacks across the brigade sector.
- Proposed daily or weekly uniform posture, based on the current threat.
- Daily main supply route (MSR) reports on attacks or activities of interest for patrols.
- Analysis of the current radar search azimuth.
- Religious or cultural activity reports that can affect current operations.

For Future Operations, provide—

- Religious or cultural activity reports affecting future operations.
- Proposed NAIs to meet future threats.
- Radar deployment orders to meet future operations.
- Threat analysis for all future operations.

Figure 1: Priority of Work Established by the Base Defense Operations Center (BDOC) S2

as in most cases in theater, the BDOC loses a bit of focus although it gains the lethality of the TOC.

Advantages of the FA TOC as a BDOC. The FA BDOC brings lethality in its abilities to clear indirect fires for counterstrike operations; conduct patrols in the AO, thereby limiting the threat to the FOB; conduct raids on suspected sites; conduct surveillance outside the FOB; and establish and direct a quick-reaction force (QRF). The meshing of the BDOC and TOC becomes what we, as Artillerymen, have called a DS artillery TOC for some time; however, it now has responsibility for the FOB's defense.

The FA TOC provides the base commander the flexibility, manning and table of organization and equipment (TOE) needed to conduct BDOC operations. These capabilities are why more senior commanders are using their FA TOCs as BDOCs in theater.

The manning of the BDOC and an artillery TOC are similar; however, the TOE of an artillery TOC provides the FOB commander situational awareness using the digital and voice equipment in the battalion's inventory.

The advanced FA tactical data system (AFATDS) and its effects management tool (EMT) combination provide the commander a common operational picture (COP) of the FOB and specific areas surrounding the FOB. Recent software upgrades allow the use of video feeds and imagery to display on large screens in the BDOC using the EMT. In addition, AFATDS can display all sensor acquisitions in the form of red vectors superimposed on maneuver boundaries, allowing the staff to conduct target analysis on all radar acquisitions.

A BDOC Model. Although Artillerymen operate most of the BDOCs in theater, no standard has been established due to the differences in FOBs and their areas of responsibilities (AORs). However, a composite snapshot can illustrate the BDOC's basic staff tenets and responsibilities.

Intel Section. The BDOC intelligence section or S2 must perform multiple tasks that fall between current and future operations. The ability to outguess the enemy is as important as the daily intelligence summaries the S2 must brief to the BDOC staff and (or) to individual Soldiers performing entry control point duty. Therefore, the BDOC S2 must establish a priority of work for the S2 section (see Figure 1).

Although most of the tasks listed in Figure 1 are not specific to the FA TOC, they are part of a BDOC S2's function or daily scope. Radar deployments and the use of named areas of interest (NAIs) affect the BDOC's ability to perform counterstrike operations.

BDOC S3 Section. In most cases, the S3 is divided into three tiers of responsibilities. First is the fires and effects cell (FEC) that is subdivided into lethal (counterstrike) and nonlethal effects (civil affairs or S5) sections. Second is current BDOC operations that can include operational activities, such as daily patrols, perimeter guards, QRF, tower guards, daily taskings for the FOB and manning the BDOC. The last is future BDOC operations that, essentially, is the planning cell for all operation and can include members from all three S3 tiers and the S2 section.

The FEC is comprised of a mixture of personnel, each of whom is a subject matter expert (SME) for his respective systems. See Figure 2 for a list of the SMEs in the BDOC's FEC by military occupational specialties (MOS).

Although the current modified TOE (MTOE) can support normal DS TOC operations, it may need changes or additions to support the BDOC and 24-hour operations. Essentially, a few additional personnel can be shifted into the FEC from other sections. For example, the battalion fire direction center (FDC) can assume the primary role of the FEC, members of the radar sections can be assigned to the FEC and FA surveyors (82Cs) can help in the BDOC as radio operators or as planners in the future operations cell.

BDOC AO in OIF. Using current doctrinal terms for high-intensity operations, the OIF BDOC AO is defined as deep, close and rear operations. Depending on the size of the FOB, the base commander must establish command and control of

- **13D**—FA Tactical Data Systems Specialist to man counterstrike operations using the advanced FA tactical data system (AFATDS) and its effects management tool (EMT).
- **13F**—Fire Support Specialist to perform targeting functions using AFATDS and (or) the automated deep operations coordination system (ADOCS).
- **13R**—FA Firefinder Radar Operator to man sensors and help with sensor deployments.
- **96B**—Intelligence Analyst to provide analysis for the BDOC.
- **31L**—Cable Systems Installer-Maintainer to man, maintain and sustain digital networks and voice communications.

Figure 2: Subject Matter Experts (SMEs) in the BDOC's Fires and Effects Cell (FEC) by Military Occupational Specialties (MOS)

the BDOC down to its lowest possible level, which, in most cases, is the DS FA TOC. Deep, close and rear operations are the focal points for the BDOC.

Deep Operations. These operations involve the area surrounding the FOB that the BDOC commands and controls. The following are examples of deep operations.

- Coordinate with adjacent units for patrol schedules, NAIs and suspected enemy positions. This coordination can impact the enemy's ability to attack with indirect fire.
- Establish human intelligence (HUMINT). This develops targets in the battlespace.
- Coordinate and use aerial surveillances. These establish the BDOC's ability to observe in its AO.
- Develop mounted and dismounted patrol schedules with clearly defined tasks and purposes.
- Develop perimeter patrolling schedules.
- Establish tower observation guidelines for target recognition.

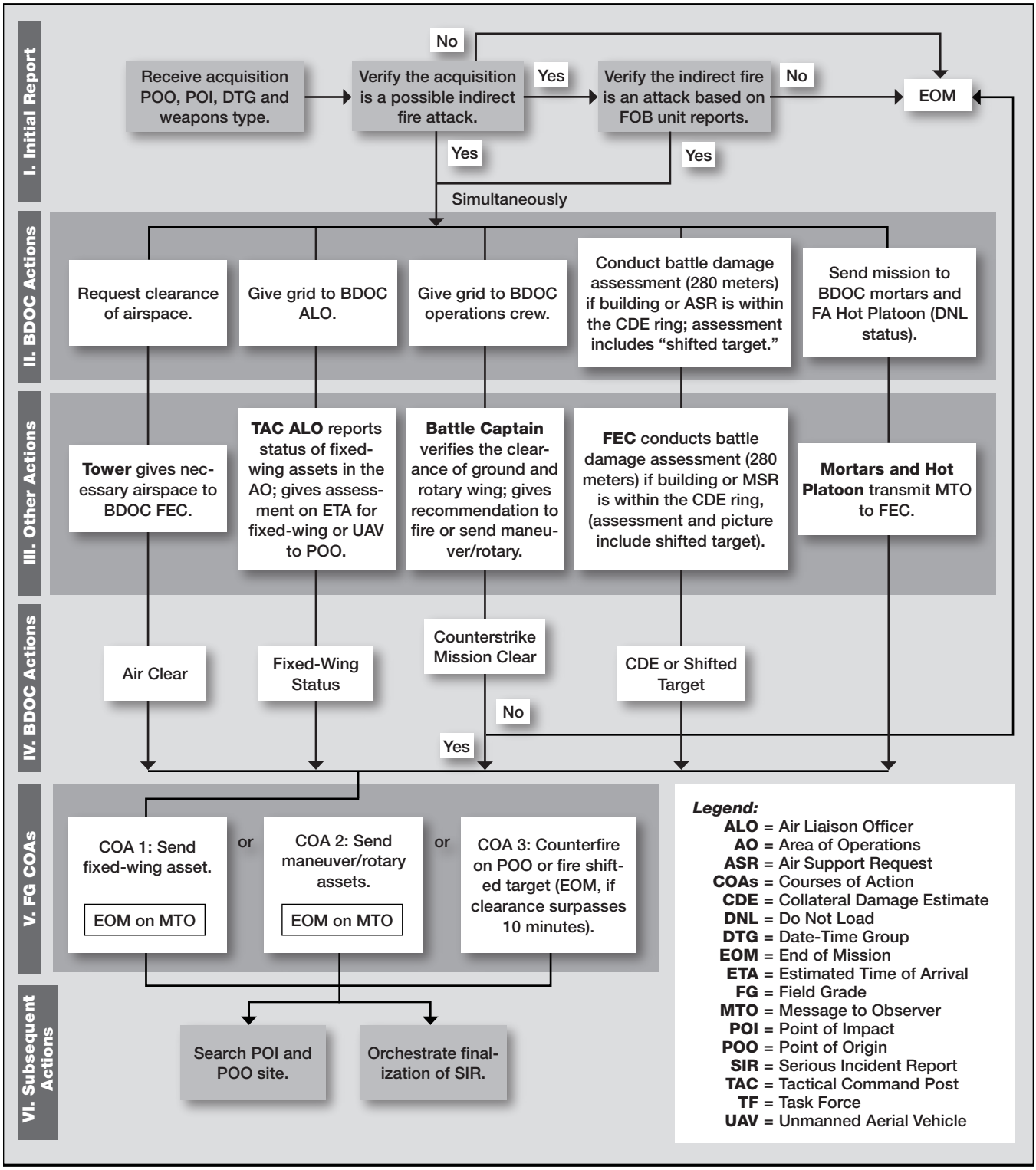


Figure 3: Proposed Counterstrike Drill used by several BDOC FECs in Operation Iraqi Freedom (OIF) III

• Establish counterstrike options for indirect, QRF and fixed- or rotary-wing assets. The latter is an example of how an FA TOC has the flexibility to conduct base defense while simultaneously providing counterstrike operations to deal with the indirect fire threat to the exterior of the base, which is the most likely area the enemy will attack.

Recent trends show that the most likely means for enemy attack is indirect fire (rockets and mortars). In most areas in theater, the DS TOC provides and controls a Hot Platoon that can be linked directly to sensors for counterstrike purposes.

Close Operations. For most FOBs close operations are considered an extension of deep operations; however, it is in close operations that the BDOC has its primary focus: the perimeter.

In most cases, the BDOC's perimeter is defined by the threat from direct fire systems, which is about 500 meters. Therefore, the BDOC must establish perimeter defenses as follows.

• Perimeter patrols, both mounted and dismounted, monitor the exterior of the FOB wall or structure.

• Entry control points monitor and search all vehicles and personnel entering the FOB.

• Towers defend the FOB perimeter as two-man fighting positions.

The FA TOC provides the FOB commander the ability to command and control the close fight as well as gives him additional assets. The following are examples of how Artillerymen are fighting the current fight in OIF.

• FA observers (13F) equipped with digital and radio equipment patrol FOB perimeters, providing quick response capabilities and instant situational awareness.

• Paladin howitzers are placed at FOB entry control points as the first line-of-defense against enemy attacks.

• 13 series Soldiers man the towers with voice and digital equipment capable of providing information to the TOC.

"Rear" Operations. These are operations involving the interior of the FOB. Although they don't involve force protection directly, these operations do help the BDOC constantly assess the FOB's vulnerability to attack or infiltration. In addition they help the BDOC respond in support of incidents, such as mass casualities or catastrophic power failures.

BDOC TTPs. The ability to address the indirect fire threat with counterstrike operations is, perhaps, where many of our artillery-run BDOCs become one in TTPs. See Figure 3 for a proposed counterstrike crew drill and Figure 4 for a counterstrike crew checklist used by several FEC BDOCs.

FEC Chief Actions	Battle Captain Actions
• Receives a Q-36 or Q-37 Firefinder radar Acquisition. • Confirms the grid, plots using imagery and checks for common sense. • Verifies or confirms the impact of the rounds. • Sends the mission to the Hot Platoon to compute a technical solution. • Clears the airspace through the tower. • Conducts CDE using imagery. • Clears the ground target with maneuver units. • Diverts or employs rotary-wing aviation, based on the gun-target line and response time. • Reviews the counterfire checklist with the Battle Captain and recommends the execution of fires or not. • Issues instructions to fire or EOM.	• Reviews the counterfire checklist to ensure all steps have been accomplished. - Grid cleared by the task force on the ground. - Airspace cleared with the tower. - Rotary-wing cleared. • Conducts independent CDE on— - Gun-target line (considerations for rocket-assisted projectiles, or RAP). - ASR/MSR. - Structures. • Receives recommendation to fire from the FEC chief. • Concurs/non-concurs with the recommendation. • Issues permission to fire or EOM, as appropriate.

Figure 4: Proposed Counterstrike Crew Checklist used by several BDOC FECs in OIF III

The migration of the artillery TOC as the BDOC also has established the use of digital communications as well as voice. This migration has allowed for additional TTPs for situational awareness inside the BDOC using digital equipment, such as the blue force tracker displayed on screens. This has allowed operations cells to track patrols, help clear fires and divert assets to areas of interest or suspected enemy positions.

Additional digital TTPs provide plain text capabilities for digital messages between the operations cell and the tower or guard point and enable fire mission processing in the event of an attack.

Another successful reactive and predictive tool incorporated into BDOC operations is the crater analysis team. It is comprised of Artillerymen (13Fs or 13Ds) who conduct crater analysis of suspected points of impact (POIs) and, in some cases, can determine points of origin (POOs). The ability to predict the type of attack (type and size of ammunition) based on the crater has proven invaluable for the BDOC S2's reactive threat analysis, construction of NAIs and determination of radar search azimuth. Crater analysis also allows the BDOC S3 to determine proactive protection measures, such as patrol schedules or the use of unmanned aerial vehicles (UAVs) on suspected POOs.

Changing our artillery TOC into a BDOC has been done easily and flawlessly in theater during OIF III. Tailoring the FA TOC to fit the mission is part of our artillery history and, as usual, we have stepped up to the task today. The BDOC does not limit or change our FA TOC mission—in fact, it enhances our ability to protect a FOB and provide counterstrike capabilities.

Sergeant First Class Robert M. Castillo is a Project Officer for the CounterStrike Task Force, Fort Sill, Oklahoma. In that capacity, he deployed for six months in Operation Iraqi Freedom (OIF) III as a Subject Matter Expert (SME) on counter rockets, artillery and missiles (C-RAM) in theater. Previously, he was the Fire Control NCO (FCNCO) for the 1st Armored Division (1st AD) Artillery in Germany and deployed with the Division Artillery (Div Arty) in OIF II. He also has served as FCNCO for the 4th Battalion, 27th Field Artillery (4-27 FA), 1st AD, in Germany; Operations Sergeant for 2-320 FA, 101st Airborne Division (Air Assault) at Fort Campbell, Kentucky; Fire Direction Observer/Controller (Wolf Team) at the National Training Center, Fort Irwin, California; FCNCO for 3-29 FA, 4th Infantry Division, Colorado Springs, Colorado; and Fire Direction Chief of 1-7 FA while it was assigned to 10th Mountain Division (Light Infantry).

4th Brigade, 75th Division as the Defense Coordinating Element for Hurricanes Katrina and Rita

By Captains Jack W. Owens and Tanya L. Schilling, SC

On 26 August 2005, three days before Hurricane Katrina made landfall in the Gulf coast region, the 4th Brigade, 75th Division (Training Support), Fort Sill, Oklahoma, was notified to deploy the Defense Coordinating Officer and Defense Coordinating Element to Louisiana in support of Hurricane Katrina relief and response activities. The Commander of the 4th Brigade is a designated Defense Coordinating Officer for Federal Emergency Management Agency (FEMA) Region VI, which consists of Oklahoma, Louisiana, Arkansas, Texas and New Mexico. His staff, the Defense Coordinating Element, for the most part, consists of personnel from the 4th Brigade.

The mission was to deploy to Louisiana in support of the Federal Coordinating Officer, the lead FEMA official whose job is to coordinate all federal response to the hurricane.

The Defense Coordinating Officer acts as the single point of contact for all agencies to request Department of Defense (DoD) assets for defense support of civil authorities (DSCA). The Defense Coordinating Element validates requests for support from DoD for both forces and (or) equipment and forwards them through Northern Command (NORTHCOM) to the Secretary of Defense for approval. Requests for National Guard assistance are handled by The Adjutant General (TAG) for the state.

The 4th Brigade Defense Coordinating Element's mission expanded to include Hurricane Rita response efforts after Rita made landfall on 24 September. The element remained in Louisiana until the last DoD asset involved in the

Photo of Hurricane Katrina Courtesy of NASA

response redeployed from the area on 15 November—although the element's support mission continues today from home station at Fort Sill.

During a teleconference on 27 August, the Defense Coordinating Officer and the brigade's DSCA planner were told they would deploy to Baton Rouge, Louisiana, to link up with a FEMA-led federal team already en route. Within hours, it was clear the storm's impact was going to be much greater than originally forecast.

At this point, the remainder of the Defense Coordinating Element received orders to deploy. The element included the brigade S2 officer-in-charge (OIC) and NCO for intelligence collection, S6 for communications support, the assistant S3 to act as the team chief, the training chief and current operations officer for day and night operations, the training officer as the liaison officer (LNO) to Joint Task Force (JTF) Katrina (to be stood up later), the training NCO-in-charge (NCOIC) and current operations NCO as operations NCOs, and a finance NCO. Early on 28 August, the element drove to Houston, Texas, and began 24-hour operations to track Hurricane Katrina and wait for the storm to pass so traveling to Louisiana would be safe.

Scope of the Relief and Response Operations. On 30 August, the element moved forward to the state emergency operations center (EOC) in Baton Rouge and joined the Defense Coordinating Officer and DSCA Planner in 24-hour operations to process assistance requests and continue the flow of federal forces into the affected areas. At the same time, the Defense Coordinating Elements of Mississippi, Alabama and Florida carried out similar missions in response to their states' requirements.

Due to the scale of the disaster and the sheer number of federal troops involved, DoD activated JTF Katrina on 30 August to assume command and control of all DoD forces in the joint operational area (JOA), making history as the first JTF activated for a natural disaster relief effort.

During the course of Hurricane Katrina relief efforts, the Defense Coordinating Element helped organize federal support for the evacuation of more than 80,000 displaced civilians from New Orleans and surrounding parishes; coordinated for more than one million cases of meals ready-to-eat (MREs) to feed stranded and displaced civilians; provided aerial imagery of the disaster area to aid in search and rescue efforts and help recovery operations; provided helicopter support for command and control, search and rescue missions and evacuations; provided medical support to the affected areas; and helped in debris removal. At the peak of operations, there were more than 20,000 Active and Reserve Components Soldiers, Sailors, Airmen and Marines in the JOA working relief and recovery operations.

COL Anthony F. Daskevich, Defense Coordinating Officer (far left), and COL John A. (Jay) Simpson, JTF Katrina's Planning Group (center), discuss operations with MG Steven P. Best, 75th Training Support Division Commanding General, and a staffer while onboard the *USS Iwo Jima*.

When Hurricane Rita hit southwestern Louisiana, the Defense Coordinating Element worked with the state government, FEMA, JTF Katrina, JTF Rita (responsible for Texas) and NORTHCOM to provide quick relief to the hard-hit Cameron and Vermilion Parishes. Within hours of Rita's landfall, the *USS Bataan* began rescue operations to evacuate civilians from the flooded coastal areas while other troops moved from New Orleans to Cameron Parish to supplement search and rescue, evacuation and relief efforts. With the Defense Coordinating Element's efforts in conjunction with those of FEMA and JTF Katrina, a 500-bed tent city was raised in less than 72 hours in Cameron Parish where the only building left standing was the parish courthouse.

While activated for Hurricane Katrina and Rita, the Defense Coordinating Element processed more than 115 requests for assistance and 98 missions to provide military support to Louisiana, totaling more than $840,000,000 in financial obligations.

After completing all the missions involving DoD forces, the Defense Coordinating Element redeployed to Fort Sill where it is still engaged in tracking mission costs and monitoring requirements from FEMA. The 4th Brigade stands ready to fulfill future DSCA requirements until the transfer of the mission to Army North (ARNORTH) at the end of FY06.

Lessons Learned. As DoD troops accomplished the missions and helped countless people, we learned many lessons, some of which are discussed in the following paragraphs.

• *Communications equipment was a problem.* During operations in the state EOC, the Defense Coordinating Element had to share limited access to telephones and computers in a large, crowded state facility to coordinate assistance and receive and send information. But as the cellular phone systems were not operational and our location was not conducive to satellite reception, we were limited to the communications capabilities the EOC could provide. When the FEMA Joint Field Office (JFO) stood up on 8 September, the Defense Coordinating Element moved into the JFO to collocate with other federal agencies. Ten phone lines and 15 FEMA computers were provided for the element's use. This equipment met the element's requirements. However, as determined by the location and size of a future disaster, FEMA may not be able to provide the communications equipment needed in the future.

Robust, stand-alone communications systems must be acquired for the DSCA mission. This should include a satellite system capable of both telephone and email traffic for long-haul communications because local systems may not be reliable during disasters.

• *There was no standard automation system to gather, store and share information.* To get up-to-date information and status reports, the Defense Coordinating Element had to monitor the First Army Portal, Fifth Army Portal, and the NORTHCOM and FEMA disaster relief websites. Also, there was no guidance or system in place for historical documentation or archival email information. The information-sharing requirement was met later in the relief efforts through the use of the dynamic synchronization event log (DSEL).

Unfortunately, the Defense Coordinating Element staff had not been fielded with or trained on the system. Although NORTHCOM sent a trainer, there was not enough time to learn and implement the system while simultaneously conducting the DSCA mission.

One way to fix this problem is to maintain the DSEL, or an equivalent system, during garrison activities so all members of the Defense Coordinating Element can train on it and practice using it. Thus, in a disaster relief effort, all organizations and units would be able to use DSEL to submit and receive situation reports (SITREPs), research assistance requests and submit information requests. If DSEL expanded to include email capabilities, collecting historical email traffic would not be an issue for post-relief effort inquiries; all the emails would be on one server. This would facilitate maintenance of the historical archives.

• *The Defense Coordinating Element needed more personnel trained to accomplish the DSCA mission.* Due to the high volume of requests, the original number of personnel who deployed to Baton Rouge was "hard-pressed" to keep pace with operations. As soon as the size and complexity of the mission became clear, the Defense Coordinating Officer called for more personnel from the brigade to support the operations.

After more people arrived and the Defense Coordinating Element moved to the JFO, the element accomplished mission requirements more easily. At the same time, there was a large learning curve for many of the element's members. This was because many of the reinforcement personnel had not received training on the DSCA mission.

At the height of the response, the Defense Coordinating Element had more than 50 personnel, including emergency preparedness LNOs from all the services and a joint regional medical plans officer.

A key position that was not filled was the judge advocate general (JAG). All legal issues were addressed to the First Army JAG at Fort Gillam, Georgia. The best option is for a staff judge advocate (SJA) officer to deploy with the Defense Coordinating Element and provide legal guidance. This would eliminate the time lag caused by "reach back" for legal guidance.

• *Unit mission tracking was an issue because the units deployed without orders that stated what their missions were.* This made it tough to track what unit was conducting which mission. In turn, it was hard to track missions as they were completed and re-mission the units.

The solution is two-fold. First, all deployment orders must state clearly the unit's mission. Second, each unit must submit a daily report about the status of its mission. These issues tie into the last lesson learned about finances.

• *Financial tracking and reimbursements are difficult.* Each DoD unit that conducts a DSCA mission must track estimated funds outflow and submit a daily report to the Defense Coordinating Element that includes this information. The unit also must submit an initial cost estimate before redeploying from the JOA. The Defense Coordinating Element uses the cost estimate to ensure FEMA reimbursement funds are

The Role of the Defense Coordinating Officer and Element in Hurricanes Katrina and Rita Relief Efforts

During Hurricanes Katrina and Rita relief and response efforts, the Defense Coordinating Officer and his staff, the Defense Coordinating Element, were from the 4th Brigade, 75th Division (Training Support), Fort Sill, Oklahoma. The brigade has a standing mission to plan and coordinate defense support of civil authorities (DSCA) for civil emergencies or attacks, including national security emergencies, and help state and local agencies, as directed. The Defense Coordinating Element manages support from federal military Active and Reserve Components' resources. National Guard forces remain under the governor's control, unless federalized.

If, when a disaster occurs, a governor does not have enough local and state resources to respond effectively, he requests a Presidential disaster declaration to use federal resources. When the President declares a federal disaster area, he appoints a Federal Coordinating Officer from the Federal Emergency Management Agency (FEMA), part of the Department of Homeland Security, to direct the federal response.

At the discretion of the Secretary of Homeland Security, a Principal Federal Official may be appointed, who becomes the lead federal official responsible for facilitating federal support and resolving interagency conflicts as well as coordinating overall federal incident management. The Principal Federal Official, usually, neither directs or replaces the command structure for the response elements nor has authority over the Federal Coordinating Officer or other federal or state officials. However, during Hurricanes Katrina and Rita relief efforts, the Principal Federal Official assumed the roles and responsibilities of not only his appointment, but also those of the Federal Coordinating Officer.

The Federal Coordinating Officer activates various federal agencies to provide emergency support functions for the disaster. At the Federal Coordinating

available.

This was not widely understood, so none of the units submitted expense reports or the initial cost estimates to the Defense Coordinating Element before redeploying. The solution is to ensure units and their higher headquarters are aware of the reporting requirement and enforce it.

ARNORTH DSCA Redesign. The majority of these issues will be addressed by the ARNORTH's plan to redesign DSCA. Under this plan, training support brigade commanders will no longer be Defense Coordinating Officers—these will be designated O-6s who are full-time Defense Coordinating Officers and collocated with their regional FEMA headquarters across the US. This move will allow Defense Coordinating Officers to participate in DSCA conferences, training and planning that training support brigade commanders have difficulty participating in due to competing demands.

There also will be standing Defense Coordinating Elements for each FEMA region trained in the policies and procedures for their assigned states that can participate in the state and FEMA meetings and training events.

These changes will allow the Defense Coordinating Officer and Defense Coordinating Element to be more familiar with their organization and federal team members as well as the plans and team members in the state emergency preparedness agencies in their regions before a disaster declaration. This greater familiarity will increase the efficiency and effectiveness of the Defense Coordinating Officer and Defense Coordinating Element during a disaster response because they'll know the procedures and requirements as well as who to talk to for what. In return, the civilian agencies will become familiar with the procedures the military follows to support the mission.

The new ARNORTH structure has the potential to greatly increase the effectiveness of the Defense Coordinating Officer and Defense Coordinating Element during disasters.

Additionally, many issues can be resolved by training DoD forces on the DSCA mission and the National Response Plan. This training would increase service members' and leaders' knowledge of the roles and responsibilities of DoD units versus those of FEMA and other state and federal agencies. Units and personnel from all levels of command designated for DSCA missions should take part in joint exercises that cover all areas of these roles, responsibilities and requirements.

With a little time and effort, the challenges faced during this DSCA can be reduced significantly, and the DoD's effectiveness in responding to future national disasters increased exponentially.

Captain Jack W. Owens is the Chief of Current Operations for the 4th Brigade, 75th Division (Training Support), at Fort Sill, Oklahoma. He deployed with the Defense Coordinating Element to Baton Rouge, Louisiana, as the Day Watch Officer in support of Hurricanes Katrina and Rita. Previously, he was the Assistant S3 for the 41st FA Brigade, V Corps, in Germany. During Operation Iraqi Freedom (OIF) I, he commanded Task Force Wrench at Camp Victory, Kuwait, and A Battery, 1st Battalion, 27th Field Artillery (A/1-27 FA) at Logistics Supply Area Dogwood where his battery ran the Combined Joint Task Force 7 (CJTF-7) Joint Visitors Bureau.

Captain Tanya L. Schilling, Signal Corps (SC), is the 4th Brigade, 75th Division S6 at Fort Sill. She deployed with the Defense Coordinating Element as the S6 and remained in Baton Rouge, Louisiana, for the duration of the defense support of civilian authorities (DSCA) mission for Hurricanes Katrina and Rita relief efforts. Previously, she commanded Headquarters and Headquarters Company (HHC) of the 13th Signal Battalion, served as the Engineer Brigade S6 and Telecommunications Officer, all in the1st Cavalry Division at Fort Hood, Texas. She also was the Operations Officer for the 142nd Signal Battalion at Fort Lewis, Washington, and among other duties, planned and executed I Corps Warfighter communications.

Officer's request, the Secretary of Defense appoints a Defense Coordinating Officer who activates his Defense Coordinating Element to coordinate requests for federal military assistance.

The Defense Coordinating Officer validates and forwards requests for military assistance to the approving military authority for resolution. If approved, a military element from one of the armed services or a defense agency is assigned to provide the assistance. While providing the assistance, the military element or defense agency is under the operational control (OPCON) of the Defense Coordinating Officer, with the exception of the US Army Corps of Engineers. Military installations may be designated as a base support installation (BSI) to provide logistical assistance to the Defense Coordinating Element and its sub-elements.

If a large amount of federal military resources or a number of task forces are assigned to provide DSCA, a joint task force (JTF) headquarters may be designated for command and control of all Department of Defense (DoD) assets. Such was the case for Hurricanes Katrina and Rita relief. JTF Katrina was task-organized into five task forces: TF *All American*, Marine Forces Katrina (MARFOR-K), Joint Forces Air Component Command (JFACC), Joint Forces Maritime Component Command (JFMCC) and Joint Logistics Command in coordination with The Adjutant Generals (TAGS) of Louisiana and Mississippi.

The Defense Coordinating Element validates and forwards mission assignments to the JTF. It also acts as a liaison between any JTF (JTF Katrina), the Federal Coordinating Officer and (or) Principal Federal Official, and FEMA to coordinate DoD support for the relief efforts.

The element currently consists mostly of personnel from the parent unit but also can include personnel from other organizations. These might be from its numbered Army, emergency preparedness liaison officers (EPLOs) from various services and special staff from a several DoD organizations. The staffing of the Defense Coordinating Element is flexible and depends on the type of disaster and the anticipated workload.

Based on the model established by the National Incident Management System (NIMS), the Defense Coordinating Element is divided into four major sections: command; operations; administration/logistics; and reception, staging, onward movement and integration (RSOI).

The Defense Coordinating Officer also has a special staff that may include a lawyer, a public affairs officer, a joint regional medical planner and a chaplain. In the case of Hurricane Katrina and Rita disaster relief, the 1st Battalion, 290th Training Support provided reconnaissance and escort teams to help in RSOI of incoming OPCON elements.

The *Tet* Offensive 1968

By Major General David E. Ott, Commandant of the Field Artillery School, 1973-1976

***Editor's Note**: This article is the first half of "Part V: The Hot War, 1968, The* Tet *Offensive" of a monograph about the role of Field Artillery in Vietnam (Parts I through VII) published in a series of 14 articles by General Ott in the* Field Artillery Journal *from January-February 1975 through the March-April 1977 editions. The entire series is online at sill-www.army.mil/famag.*

With a few alterations to increase clarity and the addition of a map, this article is a reprint of the original published in the January-February 1976 edition. It was selected for reprint because of its discussion of the value-effect of artillery in the Tet *offensive and techniques used in urban operations, including clearance of fires. It discusses challenges Field Artillerymen faced in 1968 that might provide insights for Field Artillerymen in 2006 in counterinsurgency operations.*

***General Ott's Introduction to the Series.** This monograph illuminates some of the more important activities—with attendant problems, shortcomings and achievements—of the US Army Field Artillery in Vietnam. The wide variations in terrain, supported forces, density of cannons, friendly population and enemy activity that prevailed throughout South Vietnam tend to make every action and every locale singular.*

Although based largely upon documents of a historical nature and organized in a generally chronological manner, this study does not purport to provide the precise details of history. Its purpose is to present an objective review of the near past in order to assure current awareness of the lessons we should have learned and to foster the positive consideration of those lessons in the formulation of appropriate operational concepts. My hope is that this monograph will give the reader an insight into the immense complexity of our operations in Vietnam. I believe it cannot help but also reflect the unsurpassed professionalism of the junior officers and NCOs of the Field Artillery and the outstanding morale and esprit de corps *of the young citizen-soldiers with whom they served.*

The Viet Cong and the North Vietnamese Army in late 1967 launched several costly attacks. On 29 October, the Viet Cong attacked the South Vietnamese district capital of Loc Ninh, ran up the flag of the National Liberation Front and tried to hold the city. (See the map in Figure 1.) United States and South Vietnamese forces responded with massive air and artillery bombardments, but the enemy continued to press the attack despite heavy losses.

Similarly in early November, four North Vietnamese Army regiments fought US and South Vietnamese troops near Dak To. The US command deployed the equivalent of a full division from the heavily populated coastal lowlands to the battle area. Again, as at Loc Ninh, the enemy sustained heavy casualties.

A captured enemy document listed the objectives for the 1967 campaigns. These included encouraging units to improve the combat technique of concentrated attacks to annihilate relatively large enemy units and affecting close coordination with various battle areas throughout South Vietnam to achieve timely unity.

The activity of late 1967 was a prelude to *Tet* 1968. A high-level prisoner later revealed that the assault on Loc Ninh had been ordered to test mass formations and inexperienced troops in preparation for the 1968 offensive.

Tet, the festival of the Asian lunar new year, usually was the occasion for a formal cease-fire. In 1968, however, the North Vietnamese Army and the Viet Cong, using reserve forces and the larger supporting weapons, launched a series of massive coordinated attacks in what became known as the *Tet* offensive.

As revealed by captured enemy sources, the strategy for the offensive was based on the belief that the war would culminate in 1968 and that large-scale continuous attacks, in conjunction with a general uprising of the people, would precipitate the withdrawal of US forces from Vietnam and the collapse of the South Vietnamese government, which would then be forced to accept a coalition government dominated by the National Liberation Front.

Political and military targets of the *Tet* offensive included provincial and district capitals and the government in Saigon

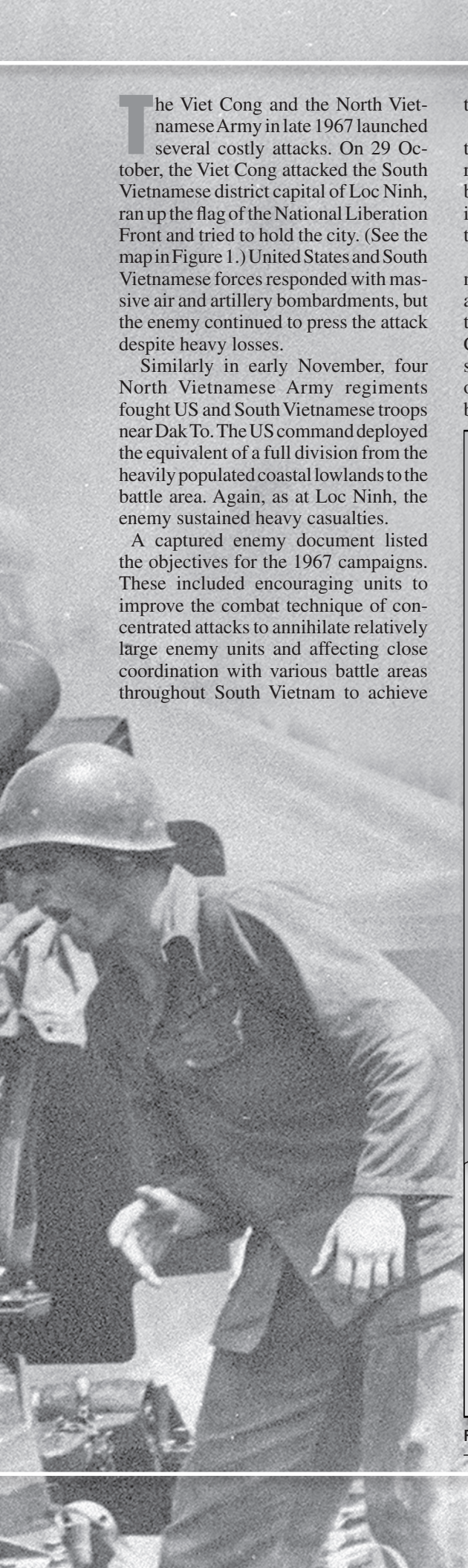


Figure 1: *Tet* Offensive

and its agencies, such as the Regional Development Cadres, the National Police and the Republic of Vietnam Armed Forces. The enemy believed that, if widespread attacks were successful, the inability of the government to protect the people would become obvious and the credibility of that government would be undermined. Installations and facilities that were essential to the conduct of the war and difficult to defend became tactical targets.

In preparation for the *Tet* offensive, the enemy went to unprecedented lengths to assemble supplies and weapons and to infiltrate the cities. In Saigon, funeral processions concealed the movement of arms and ammunition. In Hue and Saigon, enemy troops in civilian dress escaped detection. In provincial centers, such as Quang Tri, Da Nang, Nha Trang, Qui Nhon, Kontum City, Ban Me Thuot, My Tho, Can Tho and Ben Tre, the enemy infiltrated in strength.

The offensive began at 0015 on 30 January at Nha Trang. The same night 11 other cities in I and II Corps zones, as well as several military installations and airfields, came under attack. Enemy documents later revealed that these attacks were premature; the forces operating in these areas had not received the order for a one-day postponement of the offensive. The main attack took place on the following night, 30-31 January, when enemy forces hit 18 cities throughout the country.

The allies cleared most of the cities within hours. However, in a few cities, particularly Saigon and Hue, the fighting continued for days.

Attack on the Hue Area. The attack on Hue commenced at 0340 on 31 January. Elements of the 800th, 802nd and 806th Battalions, 6th North Vietnamese Army Regiment, and the 804th Battalion, 4th North Vietnamese Army Regiment, initiated a rocket, mortar and ground assault on the city. Forces of the 4th Regiment soon occupied all of southern Hue except the Military Assistance Command (MAC) compound.

Meanwhile, to the north, two battalions of the 6th Regiment moved into the citadel, an old French fortress near the center of the city. By morning the flag of the National Liberation Front had been mounted on the flag pole of the citadel, and the enemy controlled all of the fortress except the South Vietnamese Army 1st Division Headquarters.

The allies acted immediately to relieve the pressure on the MAC and South Vietnamese Army compounds. While US and Vietnamese Marines, along with the 1st Division, bore down on the enemy forces to the south and within the city itself, the 3rd Brigade, 1st Cavalry Division, sealed off Hue to the north and west. Each of the maneuver forces fought exceptionally well, but the actions of the 3rd Brigade, 1st Cavalry Division, were the most significant from a fire support aspect.

The 3rd Brigade blocking force was comprised of the 2nd Battalion, 12th Cavalry, and the 5th Battalion, 7th Cavalry. The 1st Battalion, 7th Cavalry, 3rd Brigade, was committed to base camp defense and did not join the rest of the brigade until 19 February. On that day the 2nd Battalion, 501st Airborne, 101st Airborne Division, newly arrived from III Corps, also joined the 3rd Brigade. The 3rd Brigade direct support battalion, the 1st Battalion, 21st Artillery, established a fire support base at a South Vietnamese Army compound northwest of Hue.

On 3 February, the 2nd Battalion, 12th Cavalry, detected a large North Vietnamese force positioned near Que Chu, northwest of Hue. The battalion, supported by indirect artillery fire, aerial rocket artillery and helicopter gunships, attacked the well-fortified enemy position. By 5 February, the 2nd Battalion controlled the high ground in the Que Chu area overlooking the surrounding plains and, with precise artillery fire, was able virtually to stop all enemy

Riverine Artillery in Vietnam

The terrain of the Mekong Delta was a serious hindrance to fighting forces in Vietnam [including during *Tet*]. The delta is comprised of rivers and canals coupled with swamps and rice paddies. Roads and dry ground are scarce, and hamlets and villages have long since been built on what little dry ground there is. When Field Artillery shared dry ground with a hamlet, the firing unsettled the people whose support the allies were trying so hard to win.

Even when Field Artillery was positioned on dry ground, it was difficult to employ because the high water table made the ground soft. Without a firm firing base, cannons bogged down, were difficult to traverse and required constant checks for accuracy. All this lessened their responsiveness and effectiveness.

A fighting force in the delta could not rely on ground vehicles for transportation or supply. Vehicles seldom could move the infantry close to the enemy, they were vulnerable to ambush and the scarcity of dry ground overly cramped and restricted supply operations and the activities of control headquarters and supporting Field Artillery

Even more significant than the use of helicopters in the delta was the formation of a Riverine Task Force which relied on watercraft to provide transportation, firepower and supply. The task force consisted of the 2nd Brigade, 9th Infantry Division, and the US Navy River Assault Flotilla 1.

Field Artillery support for the new Riverine Task Force was initially provided from fixed locations, but the support was less than adequate. Field Artillery needed to move and position itself to best support the ground action. This need was satisfied by the 1st Battalion, 7th Artillery, in December 1966 when the battalion first employed the LCM-6 [landing craft mechanized 6] medium-sized landing craft as a firing platform for howitzers. The LCM could be moved to a desirable position and secured to the riverbank.

Internal modifications enabled the craft to accommodate the M101A1 howitzer, but it was not wide enough to permit the howitzer trails to be spread fully, limiting the on-carriage traverse. Other shortcomings were that the craft did not afford as stable a firing platform as was desired and excessive time was required to fire.

More successful were floating barges. The concept originated from a conference in the field between Captain John A. Beiler, Commander of Battery B, 3rd Battalion, 34th Artillery, and Major Daniel P. Charlton, the Battalion Operations Officer. Their ideas prompted a series of experiments to determine the most suitable method of artillery employment with the riverine force.

The first experiment used a floating AMMI pontoon barge borrowed from the

movement.

Beginning on 9 February while the 5th Battalion, 7th Cavalry, maintained the blocking position, the 2nd Battalion, 12th Cavalry, entered the village of Bon Tri just south of Que Chu and encountered a well dug-in, regimental-sized enemy complex. For three days, US artillery air strikes and naval gunfire pummeled the positions.

On 12 February, the 2nd Battalion had to break contact without any substantial change in the situation. The 5th Battalion took over the assault, but it too was unable to dislodge the enemy. It remained for the 2nd Battalion again to pick up the assault on 21 February and finally secure the village.

Meanwhile the remainder of the 3rd Brigade, joined by the 1st Battalion, 7th Cavalry, and the 2nd Battalion, 501st Airborne, had begun its move toward Hue from the northwest. On the morning of 21 February the brigade crashed into a strong enemy defensive position in the Ti Ti Woods, approximately five kilometers northwest of the city. Tube artillery, along with naval gunfire and aerial rocket artillery, enabled the brigade to breach the enemy positions.

The advance of the 3rd Brigade toward Hue necessitated close fire support coordination. Elements of the 1st Battalion, 30th Artillery (155-mm), and 1st Battalion, 83rd Artillery (8-inch self-propelled), had been situated at Landing Zone Nole since 20 February. From that position, these elements had been supporting the Vietnamese and Marine units in and around Hue. With the approach of the 2nd Brigade, coordination requirements became more exacting to avoid shelling refugees and friendly forces.

On 21 February, the South Vietnamese 1st Division commander requested a Field Artillery liaison party from the 1st Cavalry Division to help coordinate the fire support. The liaison party, which was dispatched the next morning, contributed to the success of the operation.

At 0730 on 24 February, US and South Vietnamese forces breached the southwest wall of the citadel and met only light resistance. An intense artillery preparation the night before had killed 161 enemies. With the citadel secured, the battle of Hue was officially over. The National Liberation Front flag, which had flown from the citadel tower since 1 February, came down.

The recapture of Hue had involved four US Army battalions, three US Marine Corps battalions and 11 South Vietnamese battalions. Ten Viet Cong and North Vietnamese Army battalions had been committed in an attempt to hold the city.

Colonel Richard M. Winfield, Jr., 1st Cavalry Division Artillery Commander, in summarizing the actions and problems of the artillery, emphasized the conventional quality of the operation and concluded with a description of clearance activities and their consequences:

"In the battle for Hue, the brigade was operating four battalions in the most conventional type of conflict that this division had ever been faced with. The brigade had its normal supporting artillery—three direct support batteries, a medium battery and, during the latter periods of the attack, an 8-inch battery. From the 3rd to the 26th of February, those units fired 52,000 rounds. In addition, 7,670 rounds of 5-inch to 8-inch naval ammunition and 600 tons of Air Force-delivered munitions were expended in the area.

"In the last stages of the operation, the division commander and I went into Hue and worked with the commanding officer of the 1st ARVN [Army of the Republic of Vietnam] forces. We took whoever was needed for fire control and clearance so that we wouldn't have any major accidents against US Army, ARVN or Marine units or civilians who were all converging on Hue. This required tight and rigid fire control, which was exercised by both the GS [general support]

Navy and an M101A1 howitzer. Although the barge served its purpose, it was difficult to move and had a draft too deep for the delta area.

The barge selected was constructed of P-1 standard Navy pontoons (each seven by five feet) to form a platform 90 feet long by 28 feet, 4 inches wide. Armor plate was installed around its sides for protection. Ammunition storage areas were built on either end and living quarters in the center. This arrangement provided two areas, one on each side of the living quarters, that could be used to position 105-mm howitzers.

As the newer M102 weapon became available in Vietnam, it replaced the older M101A1 howitzer. A mount for the M102 was made by welding the baseplate of the howitzer to a plate welded to the barge deck. This mount permitted the howitzer to be traversed rapidly a full 6400 mils.

Three barges and five LCM-8s constituted an average floating riverine battery. Three LCMs were used as push boats, one each as the fire direction center (FDC) and command post and ammunition resupply vessel.

Batteries could move along the rivers and canals throughout the delta region; they frequently moved with the assault force to a point just short of the objective area.

All the weapons had a direct fire capability, a definite asset in the event of an ambush. Then the howitzers often responded with Beehive rounds, which usually broke up the ambush in short order.

When a location for the battery was selected, the barges were pushed into position along the riverbank. The preferable position was one where the riverbank was clear of heavy vegetation. This facilitated helicopter resupply, which could then be accomplished on the bank as close as possible to the weapons. Clear banks also provided better security for the battery.

The barges normally were placed next to the riverbank opposite the primary target area so that the howitzers would fire away from the shoreline in support of the infantry. This served two purposes: weapons could be fired at the lowest angle possible to clear obstructions on the far bank and the helipad was not in the likely direction of fire.

The barge was stabilized with grappling hooks, winches and standoff supports on the bank side. Mooring lines were secured around the winches and reeled in or out to accommodate tide changes so that the barges would not be caught on either the bank or mudflats at low tide.

Equipment to provide directional reference for the weapons—including aiming circle, collimator and aiming posts—was emplaced on the banks. Accuracy of fires proved to be comparable to that of ground-mounted howitzers.

Without these new developments in riverine artillery, US maneuver force activities in the delta area would have been seriously curtailed or often would have had to take place out of range of friendly Field Artillery. Instead, the Field Artillery was able to provide support when and where it was needed.

Editor's Note: This sidebar was taken from General Ott's article "Part III: Field Artillery Mobility—In Order to Win" from the May-June 1975 edition.

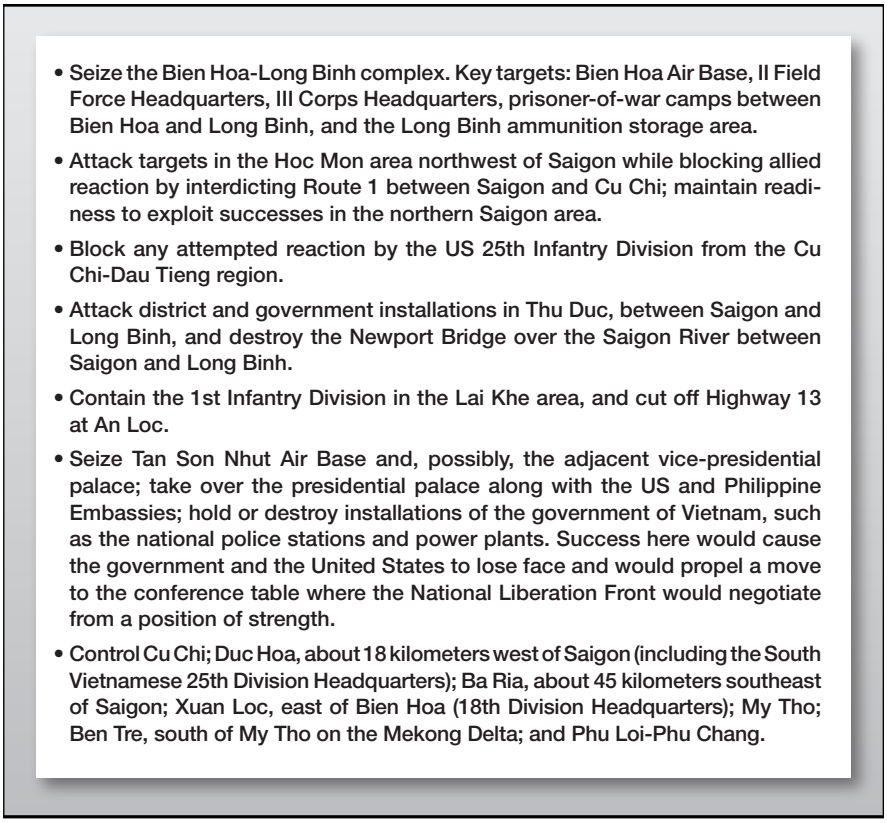


Figure 2: Enemy Operational Plan in the II Corps Tactical Zone During the *Tet* Offensive

battalion commanders, by myself and by the senior officer whom I had placed in Hue to control those fires. We had 11 fire support agencies in Hue. Now this, of course, had an effect on our infantry units, which are use to operating when they want to shoot—they call for fire and the fire is there.

"When we have all these clearance requirements and you have to have minimum safe distances all around you, the fire becomes slow because of the clearance and becomes restricted both in the caliber of weapons and in the number of rounds you can fire. I would say that the fire support was adequate. It was tough to get, but it was certainly adequate."

III Corps Tactical Zone. US plans in the III Corps tactical zone for early 1968 envisioned only 14 allied battalions remaining within a 29-mile radius of Saigon. Since early December 1967, defense of the capital itself had been the responsibility of the South Vietnamese command. The 5th Ranger Group, with a US 105-mm howitzer battalion (2nd Battalion, 13th Artillery) in direct support, was responsible for providing the necessary security. US forces thus released from the defense of Saigon were incorporated into plans for assaults on enemy base camps in the Cambodian border region. Thirty-nine battalions were to operate against these camps.

As the US plans were set in motion, however, General [Fred C.] Weyand, commanding II Field Force, became concerned about the results. Enemy resistance along the Cambodian border was weak. This weakness, coupled with the large volume of enemy radio transmissions near Saigon, convinced him of the necessity for redeployment. He conveyed his conclusions to General [William C.] Westmoreland, [Commander of the Military Assistance Command, Vietnam, or MACV]. The result was a shifting of forces. By the time of the *Tet* attacks in the III Corps area, 27 US maneuver battalions were in the capital area and the remaining 25 outside.

The operational plan of the enemy in the III Corps tactical zone is outlined in Figure 2.

Attack in the Capital Military District. In the III Corps area, the *Tet* offensive began at 0300 on 31 January in the Long Binh-Bien Hoa complex with rocket and mortar attacks on the Headquarters of the 199th Infantry Brigade and II Field Force. By 0321, Saigon and Tan Son Nhut were also receiving heavy fire.

In order to control combat units in the Capital Military District (Gia Dinh Province), General Weyand ordered his Deputy Commander, Major General Keith L. Ware, and a small staff to Saigon to take operational control of all US units. Task Force Ware, with its headquarters situated at Capital Military District Headquarters, was operational by 1100 that same day and remained so until 18 February.

At the outset of the *Tet* offensive, only one US infantry battalion and four 105-mm howitzer batteries operated in Gia Dinh Province. Three of these batteries were in direct support of the South Vietnamese 5th Ranger Group.

For political and psychological reasons, General Westmoreland had refrained from maintaining US maneuver units in Saigon and several other large cities. Once the *Tet* attacks began and American maneuver battalions arrived in the Capital Military District, division and field force artillery units relocated and supported the relief of the district.

FA Fires in Saigon—Urban Operations. Fire support for American units in the Capital Military District, particularly in Saigon, posed serious problems for the artillery. Numerous homes and shops and heavy concentrations of people within the city limited the area where artillery could be fired.

When artillery could be employed, it was slow to respond because of difficulties in obtaining clearance to fire. Vietnamese military units in the city and the city government had not been placed under a single control headquarters. As a result, no centralized clearance activity was established. Artillery liaison officers were required to obtain clearance locally from the national police station in their areas of operations. The situation was corrected in June 1968 when the ARVN established a single military governor in the Capital Military District.

Artillery support was further limited in Saigon because buildings and other structures restricted the views of forward observers. Gunships and tactical air proved more adept at providing support because the pilots had better views of the target areas. As a result, specific enemy locations could be pinpointed and damage held to a minimum. For these reasons, most of the major Field Artillery engagements in the Capital Military District during the *Tet* offensive and counteroffensive occurred in the outer edges of Saigon and in other areas of the zone.

Particularly impressive during *Tet* was the fire support provided to the 1st Infantry Division in III Corps' tactical zone. The division killed more than

1,000 enemy troops. The *Big Red One* estimated that artillery and air strikes accounted for 70 percent of these enemy losses. The volume of Field Artillery fire increased substantially during the *Tet* offensive. The 1st Infantry Division recorded the rounds fired as shown in Figure 3.

Caliber	Daily Average Before *Tet*	Daily Average During *Tet*
105-mm	2,376	5,616
155-mm	925	1,459
8-inch	200	235
4.2-inch	1,100	1,570
Total:	4,601	8,880

Figure 3: 1st Infantry Division Rounds Fired During the *Tet* Offensive

Battle of An My. The most significant engagement during *Tet* for units of the 1st Infantry Division Artillery and the 23rd Artillery Group began on 1 February. The division had shifted its artillery south along Highway 13 to meet increased enemy activity between Lai Khe and Saigon.

On the morning of 1 February, elements of the division engaged units of the 273rd Viet Cong Regiment at An My, approximately 4,000 meters north of Phu Loi. The artillery began by providing blocking fires. Then at 1330, the artillery placed destructive fires upon enemy forces entrenched in the village.

Throughout the day, 3,493 rounds hit the northern half of the village and caused approximately 20 secondary explosions. A survey of the area before dark confirmed 201 enemy killed, and evidence supported estimates of more than twice that number. Once darkness set in, the artillery again provided blocking fires.

The next morning, the 1st Infantry Division found the remainder of the 273rd Regiment still entrenched in An My. The action resumed at 1030 with the artillery continuing to provide blocking fires. When rounds were fired on the village, numerous secondary explosions again resulted. After several hours of bombardment, friendly elements swept and secured An My and found 123 Viet Cong killed.

Prisoner reports later confirmed the report of the encounter. The 273rd Regiment had been moving south when it met the 1st Infantry Division at An My; the ensuing battle rendered the 273rd ineffective before it could reach its assigned objective and contribute to the *Tet* offensive.

The performance of the Field Artillery in the III Corps tactical zone during *Tet* caused General Weyand to observe that the Field Artillery was instrumental in blunting or defeating many of the assaults in the zone: "[FA's] Timely responses, especially in the moments of fluid uncertainty during the initial phase of the attacks and in spite of clearance handicaps, contributed to the successes of the infantry and armored units."

Other FA Actions in *Tet*. Numerous smaller but significant Field Artillery actions occurred throughout Vietnam during *Tet*. For example, the 25th Infantry Division was plagued by enemy bunkers near the highway between Cu Chi and Saigon. Fires from the bunkers prevented free movement between the two locations. Numerous attempts to reduce the bunkers with artillery, air strikes and infantry assaults were unsuccessful. An 8-inch howitzer delivering assault fire finally eliminated the bunkers.

Also noteworthy were the actions of units of the 54th Artillery Group which prevented the collapse of the Xuan Loc Base Camp. On 2 February, Xuan Loc came under heavy attack. The quick, devastating fire of Battery C, 1st Battalion, 83rd Artillery, saved the post. Battery C fired 35 8-inch rounds and killed 80 of the attackers. During the period 1-18 February, similar missions supported the defense of Xuan Loc.

The 2nd Battalion, 40th Artillery (the direct support battalion of the 199th Light Infantry Brigade), was one of the first artillery units to respond to enemy attacks in III Corps. An observer detected the enemy launching rockets on II Field Force Headquarters and shifted fire onto the launching sites. Several of the firing points were neutralized before the enemy had fired all his rounds. The enemy suffered more than 50 killed.

In the IV Corps tactical zone, the enemy offensive included attacks against My Tho and Vinh Long. On 31 January 1968, the Mobile Riverine Force was placed under the operational control of the senior adviser in IV Corps. [See the "sidebar" to this article "Riverine Artillery in Vietnam" on Page 24 for more information.] The riverine force initially was moved to the vicinity of My Tho, and two of its battalions conducted a three-day operation north of the My Tho River in response to a multi-battalion Viet Cong attack on the provincial capital.

Then, on 4 February, the Riverine Force moved to the provincial capital of Vinh Long and engaged three enemy battalions trying to seize the city. The 3rd Battalion, 34th Artillery (105-mm towed), was in direct support of the Mobile Riverine Brigade. One battery was equipped with airmobile firing platforms, and two batteries were mounted on barges. The artillery battalion effectively delivered 8,158 rounds in support of the My Tho campaign.

At one point, a barge-mounted battery was required to make an airmobile deployment. The battery was provided a 1/4-ton jeep and a 3/4-ton trailer for a fire direction center (FDC). The barges were beached, and the pickup was made directly from them. This type of movement opened possibilities for deeper penetration into the Mekong Delta.

Finally, in the I Corps area on 12 February 1968, Battery C, 1st Battalion, 40th Artillery (105-mm), while in support of a South Vietnamese unit, became the first US Army artillery unit to fire improved conventional munitions in combat. The target was 40 to 50 North Vietnamese troops in the open. The battery fired 54 rounds of the new ammunition, resulting in 14 enemy killed.

The round was a controlled, fragmentation-type ammunition similar to the Air Force cluster bomb unit. "Fire Cracker" became the code word used when a forward observer wanted improved conventional munitions.

Editor's Note: Selected articles from General Ott's 14-article series will appear in subsequent editions.

Major General David E. Ott was the Commandant of the Field Artillery School, Chief of Field Artillery and Commanding General of Fort Sill, Oklahoma, from 1973 until 1976. At that time, he became the Commanding General of VII Corps in Germany, retiring as a Lieutenant General in 1978. During his career, he was the Director of the Vietnam Task Force for the Secretary of Defense, Washington, DC; Commanding General of the US Army in Thailand; Field and Air Defense Artillery Branch Chief and then Field Artillery Branch Chief, Washington DC; Commander of the 25th Infantry Division Artillery in Vietnam, the same division in which he served as a Battalion Executive Officer and S3 during the Korean War; and Commander of an 8-inch howitzer battalion in V Corps Artillery, Germany. General Ott is the author of the book *Field Artillery, 1954-1974*. He died 21 June 2004 from Legionnaire's disease at the age of 81.

Show-of-Presence Aircraft to Secure Afghan Elections:

Planning and Assessing Them

By Lieutenant Colonels Robert M. Cornejo and Luke G. Grossman, USAF, and Major Joseph W. Coffman

One of the first questions asked about the October 2004 Afghan presidential elections was, "Did the use of aircraft in the 'Show-of-Presence'[1] role work?" Specifically, "Did air presence achieve the Combined Joint Task Force 76's (CJTF-76's) air support goals for the presidential election security plan?" Members of the US Army Southern European Task Force (Airborne) (USASETAF ABN) posed these questions in March 2005 as the incoming CJTF-76 staff at Bagram Airfield, Afghanistan, during the relief-in-place of the 25th Infantry Division (Light) (25th ID).

From the 25th ID Joint Fires Element (JFE), the USASETAF ABN Joint Fires and Effects Cell (JFEC) learned that the only way to answer these questions was to describe what did *not* happen: an election marred by anti-coalition militia violence or low voter turn-out. Because of this, Afghanistan's first democratic election since the fall of the Taliban was a resounding success.

In September 2005, the Afghan government held its second democratic election. The nationwide vote gave the Afghan people the opportunity to elect a national assembly and provincial council members. CJTF-76, again, used aircraft in the show-of-presence role as part of the election security plan, and from a security standpoint, the election again was a success.

This article describes the role of aircraft conducting show-of-presence missions to facilitate security for the national assembly and provincial council election

and how to plan and assess the effectiveness of such missions. It follows up on Captain Joseph A. Katz's article "Afghanistan—The Role of 'Show of Presence' Aircraft in the First Democratic Elections" that appeared in the January-February 2005 edition.

Air Support Tasks. As Captain Katz states in his article, the 25th ID air support goals during the October 2004 Afghan presidential election were to provide security to Coalition Forces, instill a sense of instability and insecurity in the anti-coalition militia trying to disrupt the elections and provide a sense of security for the Afghan people as they took part in the election.

For the September 2005 national assembly and provincial council election, USASETAF ABN accepted the same logic but further delineated these goals into air support tasks to achieve the election's desired effects. Figure 1 shows these effects and the air support tasks required to achieve the effects.

Desired Effects

- Anti-coalition militia are prevented from influencing the Afghan people.
- Afghan National Security Forces (ANSF) can meet their election security requirements.
- Election workers maintain freedom of movement.
- Afghan people turn-out to vote.

Air Support Tasks

- Provide close air support (CAS) for regional command/task force operations.
- Provide shows-of-presence near key election nodes, population centers and ground lines-of-communications (LOCs).
- Provide CAS for Coalition Forces embedded with ANSF.
- Provide electronic warfare (EW) support along the LOCs.

Figure 1: Desired Effects and Air Supporting Tasks of the Combined Joint Task Force 76's (CJTF-76's) Missions for the September 2005 Election in Afghanistan

The CJTF-76 Joint Planning Group developed the desired effects during the election security planning process conducted in the summer of 2005. The CJTF-76 JFEC hosted an air support planning conference at Bagram in July to develop the air support tasks that would achieve the effects. Air planners from the Air Component Coordination Element and the Air Support Operations Center (ASOC) at Bagram; the Combined Air Operations Center (CAOC) at Al Udeid Air Base, Qatar; and the 19th Battlefield Coordination Detachment (BCD), also based at Al Udeid, took part in the conference. The attendees agreed on the tasks and to use show-of-presence missions again to help achieve the desired effects.

However, there was debate about how CJTF-76 should define its additional election air support needs to the Combined Force Air Component Commander (CFACC). What would be required: an "air surge"[2] period, "steady state plus"[3] air support or both? How many more hours of air support per 24-hour air tasking order (ATO) would be required?

National Assembly and Provincial Council Election Air Support Plan. As a result of the conference debate, CJTF-76 requested eight more hours of dedicated air support per ATO to conduct show-of-presence missions across the combined joint operations area (CJOA). The attendees based this decision on the 25th ID's experience and CAOC lessons learned from the prior year's presidential election.

The next step was to define when and where to use the show-of-presence missions for the best results. The air planners viewed these elections as a long-term process that began in August 2005 with the candidates' campaigns and ended in December 2005 with the national assembly seating in the capital city of Kabul. Knowing it would be neither necessary nor possible to increase air support beyond normal levels for the entire five-month period, the planners requested the increases during four critical periods of the election. These were times of increased vulnerability for either the candidates or the electorate or periods of possible increased anti-coalition militia activity against the elections. (See Figure 2 on Page 30 for the four election air presence periods.)

The first critical period was the opening week of the campaign season in late August 2005. The second occurred during the week before election day, 18 September. The third period was during the post-election ballot collection and counting period in late September and early October, and the final critical period occurred in mid to late October, when the Afghan government announced the election results.[4]

For each ATO during these periods, the CJTF-76 JFEC submitted four operational-level air support requests (ASRs) asking for two hours of show-of-presence support per ASR. To simplify planning and execution, the CJTF-76 JFEC decided to treat election day and the seating of the national assembly as separate one-day events. Air support was planned separately for these days and more closely resembled a true air surge.

With the question of when air support would be requested to achieve desired effects answered, the question of where the show-of-presence flights should be focused was the next planning step.

The JFEC and ASOC selected the focus areas for the show-of-presence missions during the critical periods by coordinating with several staff sections in CJTF-76 and with the subordinate regional commands and TFs. The core air planners, intelligence production section (IPS), joint improvised explosive device (IED) defeat TF, political advisor, civil-military operations (CMO) cell and information operations (IO) cell all had input on selecting and prioritizing air presence locations. A key step was to ensure that the show-of-presence missions did not interfere with achieving the desired effects in other ongoing operations.

The planners initially started with the show-of-presence focus areas used for the 2004 presidential election. Some areas formerly chosen by 25th ID air planners were more permissive in 2005 than in 2004 and did not warrant air presence to achieve the desired effects. Other areas still were contentious and, again, would need air presence.

The focus areas selected included large population centers, such as the cities of Kabul and Kandahar, as well as less-populated provincial areas where the Coalition presence was not as clear to the average Afghan. Finally, areas with medium to high anti-coalition militia activities or major ground lines of communications (LOCs), such as the Ring Road that connects the major cities, were selected.

To maximize the show-of-presence missions' effects over the selected locations, CJTF-76 grouped focus areas, enabling the CAOC to translate them into detailed flight routes and specific flight patterns. Air planners used terrain analysis to help choose the best

Photo by SSG Ken Denny, 117th Mobile Public Affairs Detachment

A voter from the village of Moraqhja proudly displays his ink-marked finger, showing that he voted in the first parliamentary elections in Afghanistan, 18 September 2005.

and most effective routes, given the extreme terrain.

The CAOC planned the flights to ensure the aircraft would be seen and (or) heard at random times throughout the critical periods. The random pattern and times of flight ensured the anti-coalition militia would not know when or where the presence flights would occur. The increased and unpredictable air presence allowed CJTF-76 to send the message that the Coalition could project power into anti-coalition militia staging areas as well as provide security for the election process.

With the election security air support plan complete, the JFEC outlined CJTF-76's air support requirements for the CJTF-76 commander. The outline included the air support concept, close air support (CAS) requirements and air planning guidance. Upon approval, the outline was translated into a memorandum from the CJTF-76 commander to the CFACC, requesting air component support for the operation. The memorandum was CJTF-76's input to the CFACC's air operations directive regularly published to provide guidance to air component forces.

Did show-of-presence aircraft work? To assess the success of using aircraft in the air presence role, CJTF-76 found little objective data. While the JFEC wanted to make a definitive and objective assessment, the resources for broad-based data collection were not readily available. To definitively assess the effects of air power in this role calls for substantial information about the psychological impact on both the enemy and friendly populations of Afghanistan, a goal almost impossible to attain. Therefore, to assess the effectiveness of air presence missions in election security, CJTF-76 considered both the objective and subjective information available.

The objective data showed that enemy activity spiked near election time in the months of September and October 2005. Using only measures of effectiveness (MOEs), such as IED events or enemy indirect fire attacks, led to the conclusion that CJTF-76 and the increased air presence did not prevent the anti-coalition militia from influencing the Afghan people, one of CJTF-76's desired election effects. However, the increased enemy activity mostly targeted Coalition Forces, and CJTF-76's ground forces significantly increased their offensive operations during this time.

Without more objective data, the JFEC considered the subjective assessments of US ground commanders and the effectiveness of anti-coalition militia attacks on the election process. The information ground commanders provided showed mixed conclusions. The responses varied between commanders' thinking that air presence missions had significant positive effects on the friendly population to commanders' believing that the air presence had little or no effect on election security. Commanders did agree that the large number of aircraft supporting the election positioned the aircraft to provide almost immediate CAS if anti-coalition militia engaged their troops—a definite advantage.

The inability of anti-coalition militia attacks to thwart the election gives a more positive indication that the use of air presence was beneficial. Reviewing CJTF-76's desired election outcomes shows that the anti-coalition militia did not greatly influence the Afghan people: the Afghan National Security Forces (ANSF) met all of their election security requirements, election workers did not lose their freedom of movement and the Afghan people turned out to vote. While enemy attacks did increase during the election period, the anti-coalition militia was unsuccessful in disrupting the election and the Afghan government successfully garnered enough voter turn-out to verify that the elections were legitimate.

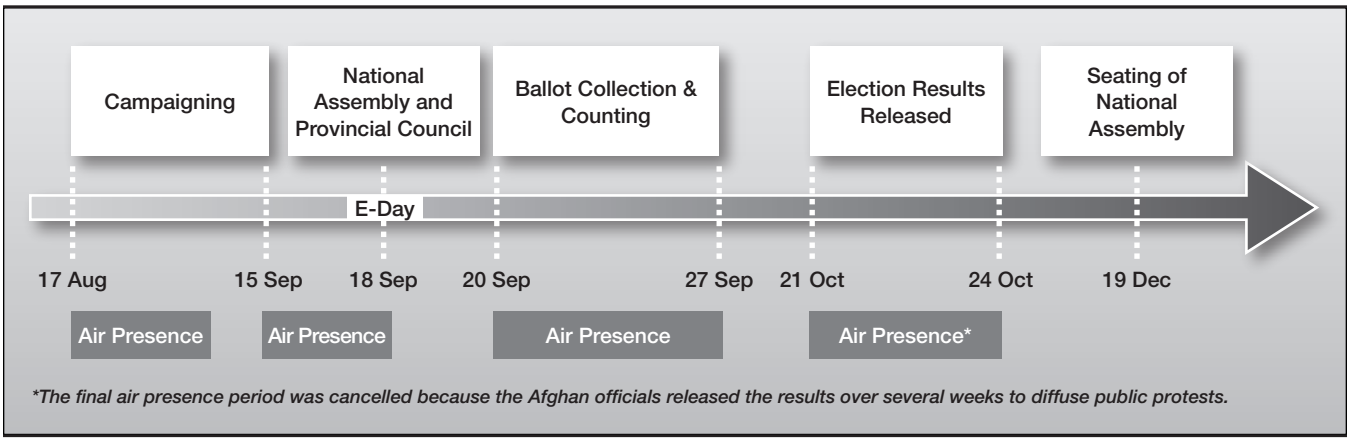


Figure 2: National Assembly and Provincial Council Election Time Line and Air Presence Missions, August to December 2005

These results suggest that air presence missions were effective.

However, there are other possible factors that could have played a role in achieving security during the election. Foremost among these factors are local conditions. The local leaders' good governance, local religious leaders' support for the election and the ANSF's positive actions in the provinces and districts are identified by some as the greatest contributors to election security.

With the lack of objective data and only partly conclusive subjective data, assessing whether or not air presence works in an election security plan must be left to the ground and air components' senior leadership. This is an example of the inconclusiveness of the science of war and where the art of war must be relied upon to gain the correct conclusion. Given the fact that CJTF-76 had access to aircraft to use in the air presence role, it was wise to employ this support to influence the national assembly and provincial council election favorably.

Looking at the election from a broader perspective and using the two successful Afghan elections during 2004 and 2005 as data points, the conclusion is that CJTF-76 successfully achieved its goal of preventing the anti-coalition militia from disrupting the Afghan election and aircraft in the presence role contributed to this success.

Recommendations for Air Presence in Future Elections. Each operation has its unique set of parameters that must be assessed before and during planning and execution and then after operations have ended. Given this set of conditions, we cannot predict whether or not aircraft flying in the presence role would significantly affect a given operation or election in the future.

However, the questions in Figure 3 may lead planners of future operations to assess whether or not aircraft in a presence mission would help achieve their desired results. The mission, enemy, terrain and weather, troops, time available and civil considerations (METT-TC) planning factors frame the questions.

Certainly, there have been times and places where aircraft performing the air presence mission significantly and positively helped to achieve the desired operational effects. There likely will be times in the future when they, again, will help obtain the desired operational effects. The challenge is to correctly gauge when to use this responsive, flexible and powerful tool.

- What is the mission? Can aircraft used in air presence roles support mission completion? Will their use in this role contribute more than if they were used in other roles?
- What effects will aircraft in the show-of-presence role have on the enemy? How does the enemy react when aircraft are in the vicinity? Do aircraft provoke the enemy to take action against Coalition Forces or the population?
- What is the threat to the aircraft involved? How would the loss of an aircraft in this role affect the situation? Is the risk of flying aircraft in the show-of-presence mission worth the anticipated gain?
- How will pulling aircraft away from other missions (e.g., CAS) affect support to friendly actions? Will friendly ground forces have access to air support, if needed? Can the air component command increase its sortie generation to meet expected needs and at what cost?
- What are the best times to use air presence missions during the operation or election time line? What are the best times of the day or night to fly air presence missions?
- How does the friendly population feel about seeing and hearing coalition aircraft? Will air presence increase the likelihood of the population's behaving as desired during the operations or election? Can the success of the desired effects be measured?

Figure 3: Questions to Assess Whether or Not Air Presence Missions Will Achieve Desired Effects

Endnotes:

1. "Show-of-Presence" is a term used to denote the use of fixed- and rotary-wing aircraft in a role where they are visible and (or) audible to the populace but at an altitude and flight profile that is not directly threatening, i.e. not simulating release of air-to-ground ordnance or not in close proximity to friendly forces engaged in close combat. In comparison, "show-of-Force" aircraft are flown in an aggressive and threatening manner to intimidate enemy forces or a hostile or potentially hostile populace.
2. "Air surge" describes a period where aircraft are flown at or nearly at maximum operational tempo (OPTEMPO). This tempo only can be sustained for short periods of time (e.g., seven to 10 days) before a significantly reduced tempo must commence in order for aircraft and their aircrews to recuperate.
3. "Steady state plus" describes a period when aircraft are flown at or very near their maximum continuous OPTEMPO for a prolonged period (e.g., 20 to 30 days) before reduction to steady state or sub-steady state operations are resumed.
4. The fourth period of air presence missions was cancelled by CJTF-76 because the national assembly and provincial council election results were not released in the short period of 21 to 24 October 2005 as originally planned by the Afghanistan government. Instead, the election results were released over several weeks in October 2005 to diffuse public protests to the outcome.

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Lieutenant Colonel Luke G. Grossman, USAF, commands the 4th Air Support Operations Squadron (ASOS) in Mannheim, Germany. He served in OEF as the CJTF-76 Air Support Operations Center (ASOC) Director in Bagram. His previous assignments include F-16 operational flying assignments where he participated in Operation Deliberate Force in Bosnia and Operations Provide Comfort and Northern Watch in Iraq. He also served as Chief of Close Air Support (CAS) Plans and Operations and then Chief of the Offensive Air Operations Branch in the Combined Air Operations Center (CAOC) during Operation Allied Force in Kosovo. He is a graduate of the Command and General Staff College and the School of Advanced Military Studies at Fort Leavenworth, Kansas.

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Fort Sill's SMART Lab Provides Unique Capabilities

By Lieutenant Colonel (Retired) Rocky G. Samek, AC

The Systems Modeling, Analysis, Requirements and Test (SMART) Laboratory brings a unique capability to Fort Sill, Oklahoma. Deploying and non-deploying active Army, National Guard and Marine units can use its resident functions and in-house experts to hone their multiple-launch rocket system (MLRS) fire control panel, command and control (C^2), and communications digital skills. Also, Army hardware programs—from the high-mobility artillery rocket system (HIMARS) to the advanced FA tactical data system (AFATDS)—can use the SMART Lab to reduce costs and, ultimately, field a better product to the warfighter in less time.

This article provides information on where the SMART Lab is located, its unit training and testing capabilities, and future initiatives upon which the lab is focused.

Fort Sill established the SMART Lab in 1998 as a central site for the rocket and missile development community to exercise fire mission threads and develop procedures for firing the Army tactical missile system (ATACMS). The Army's range of tactical hardware and communications architectures that differed from theater to theater drove the need for the facility.

Since being established, the SMART Lab has expanded its focus to include exercising fire mission threads before live-fire ATACMS and rocket shots; participating in formal limited user tests for the M270A1 MLRS launcher, HIMARS and the guided MLRS (GMLRS) rocket; and unit training in fire mission processing for both ATACMS and rockets.

A Fort Sill Asset. The SMART Lab is located in a large bay on the east end of I-See-O Hall near the joint fires and effects trainer system (JFETS). The Training and Doctrine Command (TRADOC) Systems Manager for Rocket and Missile Systems (TSM RAMS) provides SMART Lab oversight while the Program Manager for Precision Fires Rocket and Missile System (PM PFRMS) provides much of the funding to keep the lab staffed and operating. The SMART Lab consists of commercial and tactical computers, communications

Photo by Fred W. Baker III

devices (radios, modems and antennae) and cabling configured similarly to that in tactical MLRS units.

Although called a "lab," Soldiers easily recognize the equipment in it. For example, it is common to see an M270A1 or HIMARS launcher parked outside, traversing and elevating during digital dry fire missions, while Soldiers inside the lab are refining their skills with the latest version of AFATDS software. The lab can provide in-house individual training support for up to 30 personnel.

Unit Focus. The SMART Lab is modular and can be tailored to specific unit training requirements. Although routinely configured as a battalion headquarters, the SMART Lab easily can be configured as a higher- or lower-echelon operational facility in any number of combinations. This flexibility allows commanders to target specific training objectives when their units arrive, focus on areas needing the most emphasis and make the most of the training time.

Recently, the lab gained access to the Defense Research and Engineering Network (DREN). DREN is a sophisticated Department of Defense (DoD) long-haul telecommunications backbone and allows the SMART Lab to distribute training to multiple units that can access DREN.

Expertise. Staffed with military, government civilian and support contractor personnel, SMART Lab offers expertise in MLRS and C^2 software operations and troubleshooting at the individual through unit levels. From AFATDS database construction to exercising ATACMS and rocket mission threads, the personnel in the SMART Lab can help FA MLRS units at the individual and collective levels.

Many who support the SMART Lab have been overseas to support software fieldings and mobile training teams (MTTs) in both combat and non-combat zones. Personnel from the SMART Lab recently were deployed to support the Coalition Forces Land Component Commander (CFLCC) in Iraq.

Test Facility. Not long ago, the Central Technical Support Facility at Fort Hood, Texas, chose the SMART Lab as an offsite test facility. This allows software block mission threads testing at Fort Sill instead of Fort Hood for the M270 and M270A1 launchers, HIMARS and AFATDS.

The savings in personnel time and travel dollars is evident; however, the benefits of improved software product and reduced turn-around times may not be so obvious. Now, Fort Sill-centered fire support programs can test-fix-test in timelines not achievable until the SMART Lab was selected as a testing facility. The Soldier gets an improved warfighting capability with fewer bugs in less time.

Future Capabilities. The SMART Lab has focused much of its collective expertise and effort on a high frequency (HF) radio and antenna for possible integration into the MLRS and HIMARS launchers. Integrating this ability will give the launcher long-range capabilities not achievable with the frequency modulation (FM) radios currently used on the launchers.

Testing has been promising as communications threads have been exercised from Fort Sill to White Sands Missile Range, New Mexico, a distance of more than 700 miles. An integrated long-term solution requires more work. SMART Lab personnel are at the forefront of this exciting new capability.

Another effort involving the SMART Lab is onboard enhanced C^2. This capability will allow the M270A1 or HIMARS to

receive a digital fire mission directly from a sensor (e.g., Apache helicopter, Special Operations Forces, etc.) and compute the tactical and technical firing solution. The rocket and missile community currently does not have this sensor-to-shooter capability. Enhanced C^2 is envisioned for specific mission threads under specific tactical scenarios, so not all launchers will receive this software upgrade.

Fort Sill just received its first non-line-of-sight launcher system (NLOS-LS) container/launch unit (CLU), and the SMART Lab will be a test and integration facility for this future combat system (FCS) weapon. SMART Lab personnel will validate system requirements, develop and refine crew procedures and develop training to support the initial fielding to the experimental brigade combat team (EBCT) in FY08.

Commanders wishing to schedule training in the SMART Lab or discuss fire mission threads and associated launcher behavior during fire mission processing can contact Sergeant First Class Alan Muilenburg, the NCO-in-Charge for Command, Control, Communications, Computers and Intelligence (C^4I) in TSM RAMS, at commercial (580) 442-6607 or DSN 639-6607 or email him at alan.muilenburg@sill.army.mil.

Lieutenant Colonel (Retired) Rocky G. Samek, Acquisition Corps (AC), is a contract Senior Military Analyst supporting the Training and Doctrine Command (TRADOC) Systems Manager for Rockets and Missile Systems (TSM RAMS) in the Futures Development Integration Center (FDIC), Fort Sill, Oklahoma. While on active duty, he was the Assistant TSM RAMS, the job from which he retired in 2004. In previous military assignments, he was the Assistant Project Manager for the 2.75-Inch Rocket Project at Rock Island, Illinois; Assistant Project Manager for Logistics and Manpower and Personnel Integration at Picatinny Arsenal, New Jersey, working on the Crusader Project; and Test Officer at Yuma Proving Ground, Arizona, testing a wide array of current and future indirect and direct fire munitions, ranging in size from 60-mm to 203-mm. In other Army assignments, he was the Plans and Mobilization Officer in the Brigade S3 shop of the Field Artillery Training Center (FATC), Fort Sill, and commanded B Battery, 2nd Battalion, 80th Field Artillery, also in the FATC.

First-Ever JFO CAS Sustainment Training on Fort Sill—Open to All JFOs

On 2 February, the Joint and Combined Integration Directorate (JACI), Fort Sill, Oklahoma, hosted the Army's first close air support (CAS) sustainment training for joint fires observers (JFOs). The one-day training helps maintain a JFO's qualification to observe CAS aircraft and work with a joint terminal attack controller (JTAC) via radio to provide the data the pilot needs to execute CAS missions. The Army JFO will be on the front lines of combat while the JTAC could be miles away from the engagement area, relying on the JFO's eyes and CAS knowledge and experience to provide him the information he needs to control the attack. The instruction includes a class about how to train JFOs at home station, time in the JFO simulator and time with a JTAC on live controls.

For this first iteration of the training, there were two JFOs (13F Fire Support Specialists) who trained on urban CAS. The JFOs provided the JTAC the data for "dry" CAS on Fort Sill "targets" from the rooftop of the Field Artillery School, Snow Hall, employing a B-52 bomber flying over Fort Sill. The B-52, which had no bombs on board, was part of the 93rd Air Wing out of Barksdale AFB, Louisiana. The JFOs observed the targets (buildings on Fort Sill visible from Snow Hall's roof) and worked with maps to provide the exact data needed by the JTAC, who then talked directly to the pilot who simulated attacking the targets.

Historically, bomber pilots don't execute missions via "talk-ons" to the target. However, the 93rd Wing asked to train JFOs at Fort Sill because their B-52s have the new Litening-Airborne Targeting (AT) pods, which allow the pilots to visually acquire urban targets from an altitude of 26,000 feet. The pilots, like the JFOs, are sustaining their skills in readiness for action in the Global War on Terrorism.

Fort Sill is working with the Air Force Rover III manager to buy two kits to enhance Fort Sill's JFO initial and sustainment training. The receive-only kit is a laptop with antennae that allows a JTAC to see the same video the pilot sees with his Litening-AT pod and the displays on the Sniper pod or Predator unmanned aerial vehicle (UAV).

JFO CAS sustainment training will be conducted on Fort Sill every Thursday and is open to JFOs in units worldwide. The venue for the controls will vary. The training may occur at Falcon Range on Fort Sill where aircraft can drop live ordnance on targets or it could be day or night dry CAS in different locations on Fort Sill. Active and Air National Guard units from Oklahoma, Arkansas, Texas and New Mexico will provide A-10s, F-16s, F-18s AT-38s, B-1s and B-52s for the JFO training at Fort Sill.

Units interested in scheduling JFOs for the Fort Sill sustainment training—ideally with JTACs from their aligned air support operations squadrons (ASOS)—can contact Major Bill Peterson in JACI at (580) 442-2353 or DSN 639-2353 or via email at william.peterson1@us.army.mil.

Joint Fires Observer (JFO). The Army and Air Force define a JFO as a "trained service member who can request, adjust and control surface-to-surface fires, provide targeting information in support of Types 2 and 3 CAS terminal attack controls and perform autonomous terminal guidance operations." Type 1 CAS control is used when the JTAC must acquire both the attacking aircraft and the target visually. Type 2 CAS applies when the JTAC cannot visually acquire the target and (or) the attacking aircraft at weapons release. Also during Type 2 CAS control, attacking aircraft may not be able to acquire the mark (or) target before weapons release. Type 3 CAS is when there is a low risk of fratricide and, with the ground commander's approval, the JTAC can grant "blanket" clearance for the attacking aircraft to release their weapons. ("Joint Fires Observer," September-October 2005 edition, online at sill-www.army.mil/famag.)

Soldiers from Task Force Alpha hand out copies of the Peace Paper to local Afghan children.

Afghanistan: CJTF-76 Joint Fires Board in OEF 04-06

By Captains Daniel C. DiNicola, Leo F. Brennan III and Bruce J. Carter

You are assigned to the fires and effects cell (FEC) at the combined joint task force (CJTF) level as a fire support officer (FSO). There are two regional commands and a task force (TF) within your area of responsibility (AOR), each with its own enemy situation, unique capabilities and constraints.

In Regional Command 1, there are two significant combat operations currently in planning and several humanitarian assistance (HA) missions underway to prepare for the coming winter. Recently, there has been an increase in improvised explosive devices (IEDs) discovered or detonated.

In Regional Command 2, one significant combat operation is underway and another is in planning. Reports indicate a strong possibility that enemy indirect fire attacks will occur within the next 48 hours.

Finally, in TF Alpha, border security remains the top priority while the rainy season has brought major flooding to the region, requiring an immediate humanitarian relief mission.

The CJTF has increased air support throughout the area to resource an increase in the operational tempo (OPTEMPO); several close air support (CAS) platforms have scheduled maintenance within the next seven days. Your task is to distribute the limited theater assets available to best support each regional command and TF while complying with the CJTF commander's intent.

In March 2005, the US Army Southern European Task Force (Airborne) (USASETF-ABN) deployed to Afghanistan as the CJTF-76 Headquarters in support of Operation Enduring Freedom (OEF) 04-06. After its relief-in-place with the 25th Infantry Division (Light), the USASETAF-ABN/CJTF-76 Chief of Staff directed the joint FEC (JFEC) to revise the staff system that prioritizes, synchronizes and gains approval for lethal and nonlethal operational fires, a seemingly daunting task at the CJTF level.

The JFEC quickly learned that each regional command (or brigade combat team, BCT) and TF had unique needs while the JFEC, the information operations (IO) cell and the J2 collection management division on the CJTF staff each had its own methods for provid-

ing regional commands operational resources. The JFEC knew that the diverse cells must work together to synchronize effects in accordance with the commander's intent. So, the CJTF-76 JFEC developed the daily joint fires board (JFB) to synchronize the efforts of these cells in OEF.

This article describes the OEF JFB, explains format and procedures and recommends its use to other CJTFs or divisions.

JFB Composition and Intent. The CJTF-76 JFB began in March 2005 with a daily face-to-face morning meeting with the chief of staff, JFEC chief and representatives from J2 collection management, the air support operations center (ASOC) and the electronic warfare officer (EWO). Over time, the board evolved to include other cells and the regional commands and TFs and took place in a "virtual" conference room within the information workspace (IWS) software used in OEF. (See Figure 1 for the JFB participants.) This allows all elements to take the briefing from their desktops and includes distant stations, providing a collaborative information environment for personnel at multiple sites.

Each briefer supplies PowerPoint slides for display in the conference room. All participants in the virtual meeting can address the other attendees in the session. The ability to communicate within the virtual environment facilitates discussions and usually allows most issues to be resolved quickly.

- Chief of Staff
- Chief, Joint Fires and Effects Cell (JFEC)
- Chief, CJ3 Current Operations
- Chief, CJ2 Collection Management
- Director, Air Support Operations Center (ASOC)
- Staff Weather Officer (SWO)
- Electronic Warfare Officer (EWO)
- Information Operations (IO) Officer
- FSO, JOC
- Fires Rep, Regional Command 1
- Fires Rep, Regional Command 2
- Rep, Task Force (TF) Alpha Fire Support Element (FSE)
- Rep, TF Bravo FSE
- Rep, Aviation Brigade FSE

Figure 1: Participants in the Combined Joint Task Force 76 (CJTF-76) Joint Fires Board (JFB) in Operation Enduring Freedom (OEF) 04-06. The chief of staff chairs the daily JFB and provides guidance while the fire support officer (FSO) from the joint operations center (JOC) runs the meeting.

The JFB's intent is to ensure unity of effort and synchronize kinetic and non-kinetic fires within the combined joint operations area (CJOA). The chief of staff chairs the board and provides guidance and approval to the JFB participants.

The JFB focuses on two air tasking order (ATO) days into the future and works backward to the current ATO day. This allows the regional commands, TFs and the CJTF staff sections to better forecast requirements, ensure synchronization and unity of effort, and identify in advance any potential conflicts that may develop with pending operations.

JFB Process. The joint operations center (JOC) FSO opens the meeting with a brief introduction that includes a review of the day's agenda. The JFB's first briefer is the CJ3 current operations officer, who discusses level 1 and 2 unit operations in execution or scheduled to begin within the next two ATO days. A level 1 operation means there is the possibility of contact with the enemy and a limited chance of political or economic implications and requires CJTF-76 resourcing. A level 2 operation is a deliberate operation (day or night) where contact is expected and political, economic or strategic implications are anticipated. A level 2 operation requires CJTF resourcing and is more complex than a level 1 operation. Only levels 1 and 2 operations are briefed in the JFB.

The current operations officer describes these operations by day and by regional command or TF within each day. His update allows the OEF joint fires community to recognize any requirement to focus operational-level resources in advance. If an operation also involves pre-planned air strikes, the JFEC and the ASOC can ascertain any unique requirements for that operation.

All times are Zulu Current as of 09 Aug 05	ATO: LB (09/0300-10/0259)	ATO: LC (10/0300-11/0259)	ATO: LD (11/0300-12/0259)
Regional Command 2	ZAS601; (1000-1130) Armed Recce IVO Khost ISO Op Viper ZAS602; (1400-1630) Armed Recce IVO Khost ISO Op Viper ZAS903; (0330-0530) Armed Recce IVO Nangahar ISO Op Dragon ZAS904; (0530-0700) Armed Recce IVO Nangahar ISO Op Dragon ZAW701; (2330-2350) Force Protection IVO Paktika ZAW901; (0300-0400) Force Protection IVO Nangahar ISO Op Dragon	ZAS702; (0130-0259) Armed Recce IVO N. Paktika ZAS901; (0330-0530) Armed Recce IVO Nangahar ISO Op Dragon ZAS902; (0530-0700) Armed Recce IVO Nangahar ISO Op Dragon ZAW701; (1600-0100) Force Protection IVO Paktika ***Legend:*** **IVO** = In the Vicinity of **ISO** = In Support of **Op** = Operation **Recce** = Reconnaissance	ZAS601; (1000-1200) Armed Recce IVO Khost ISO Op Cobra ZAS602; (1200-1400) Armed Recce IVO Khost ISO Op Cobra ZAS901; (0630-0930) Armed Recce IVO Nangahar ISO Op Dragon ZAS902; (0930-1130) Armed Recce IVO Nangahar ISO Op Dragon ZAW701; (1600-0100) Force Protection IVO Paktika ZAW901; (0300-0700) Force Protection IVO Nangahar ISO Op Dragon ZAW902; (1100-1400) Force Protection IVO Nangahar ISO Op Dragon

Figure 2: CJTF-76 Close Air Support (CAS) Synchronization Matrix. "LB" identifies the current day's air tasking order (ATO), "LC" the ATO one day out and "LD" two days out.

Next, the JOC FSO recaps the last 24-hours of EW coverage. Specifically, the FSO discusses any EW missions not supported due to maintenance, fuel issues or deconfliction problems. This allows the regional commands and TFs to make better decisions about operations and convoys for the current day. Many units plan their movements and operations with the expectation that the EW plan was flown as scheduled. In some instances, this is a critical factor that can change the overall risk assessment for an operation if the EW mission is not flown as scheduled.

The CAS synchronization briefing shows air support requests (ASRs) for a three-day period—the current day and the next two days—in an easy-to-read comprehensive table. Typically, one slide for each regional command and TF and one for the CJTF captures all the ASR submissions for the period. See Figure 2 on Page 35 for a sample CAS synchronization matrix for Regional Command 1.

The FSO confirms with each regional command or TF that the number and the details are correct for each ASR submitted for the next two days. Because the JFB focuses two days in the future, the ASRs in the last column of the CAS synchronization matrix are briefed in two other segments of the meeting: the ASR/intelligence, surveillance and reconnaissance (ISR) tracker section (a timeline format) and in the ISR/CAS coverage section (map format). Any changes or unsupported ASRs for the current day also are briefed to verify all regional commands and TFs have the most current picture of the ATO.

Aircraft maintenance days are a part of continuous combat operations and have a considerable impact on CAS and ISR planning. The intent of briefing the monthly maintenance calendar is to minimize the effects of aircraft maintenance on operations within the CJOA by making all regional commands and TFs aware of the limitations on air support for their operations. As a result, units may adjust their plans to ensure maximum coverage. It also is possible to move some maintenance days earlier or later to meet tactical requirements identified and coordinated

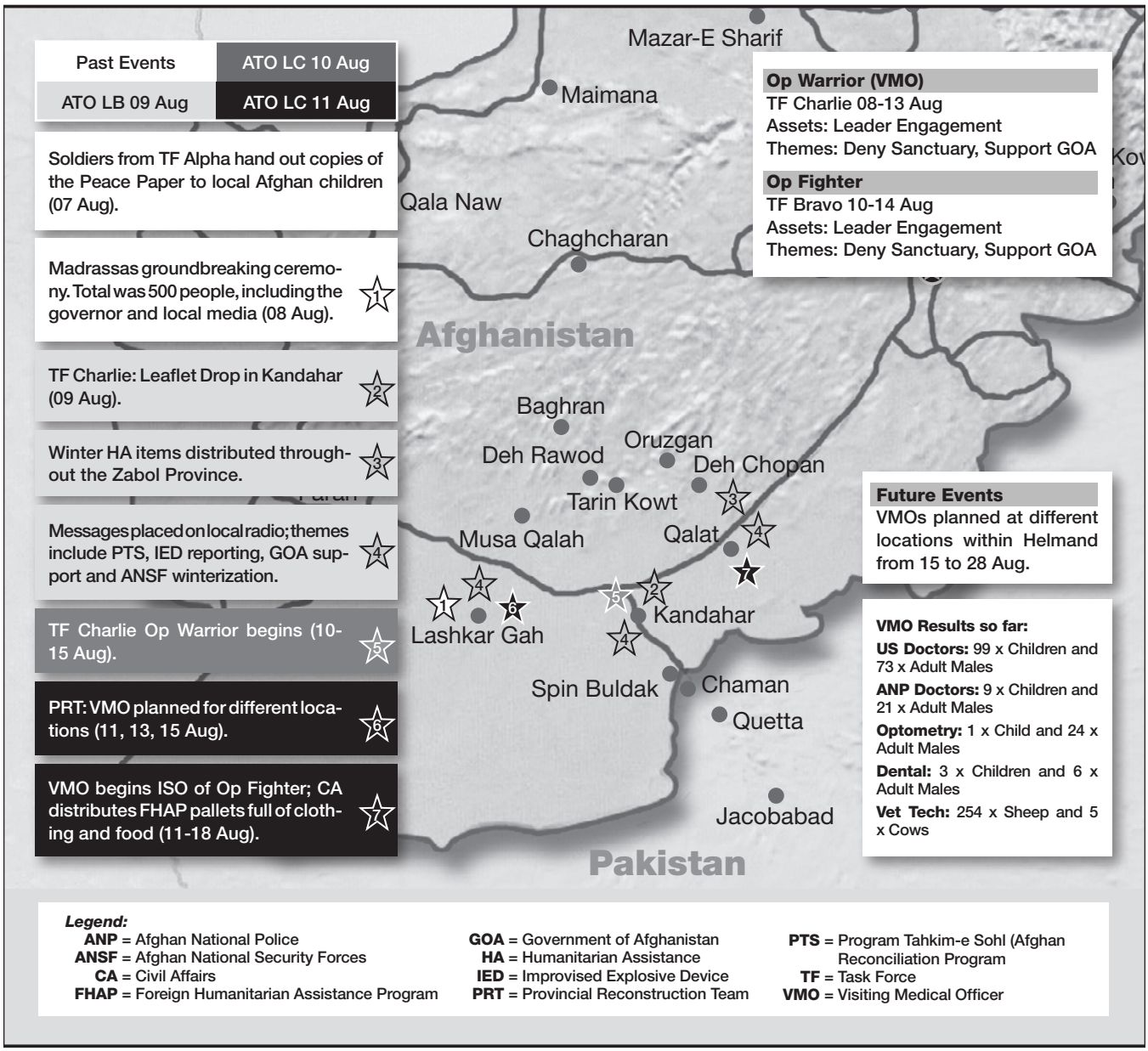

Figure 3: Sample Information Operations (IO) Map for Regional Command 1 (9-11 August 2005)

in advance.

The staff weather officer's (SWO's) part of the JFB has been very useful, especially through the winter months. Because weather affects rotary-wing, fixed-wing and ISR platforms, identifying potential weather implications in advance significantly aids the joint fires planning process. The SWO also briefs from the current ATO day through the ATO-plus-two days, focusing on the latter.

A representative from the CJ2 collection management division, usually the collection manager, discusses the theater ISR assets the CJTF has allocated and where they are scheduled to fly two days out. He uses two slides for this portion, one for each regional command. If the chief of staff has a change in an ISR priority during the JFB, the collection manager gives that guidance to the Central Command (CENTCOM) Joint Collection Management Board (JCMB) to secure the collection assets.

The EWO follows the CJ2 collection manager. He briefs one slide showing scheduled EW support two days out. He gives a quick overview of the areas to be supported and at what time.

During the past year, deconfliction of EW missions has gone from being a difficult challenge to a manageable part of the joint fires daily battle rhythm. This is largely due to efforts to increase knowledge of EW at the CJTF level and below as well as regular discussions on EW at the regional command and TF levels, often during a JFB session. Any units struggling with deconfliction, wanting to request adjusted time lines or needing cancellations, have a forum in the JFB to discuss these issues. This gives all the regional commands and TFs immediate feedback on current issues and facilitates answers to those issues.

The JOC FSO follows the EWO and briefs the ASR/ISR tracker. This includes two slides, one each for the first and final 12 hours of the ATO day being discussed. These slides depict the times for the scheduled ISR platforms and the unit being supported by that platform.

Given the limited CAS assets in theater, graphically depicting ASRs from each unit on a timeline allows the CJTF staff to easily identify any need to request air support above normal levels (called "steady-state plus" air support or "air support surge"). The staff also can identify ASRs that might be unsupported or require a time change to be supported.

US Army Photo by SGT Andre Reynolds

CPT John Matunis, CJTF-76 Surgeon Cell, checks an Afghan boy's throat during a visiting medical officer (VMO) program in the Province of Kandahar, Afghanistan, 23 January 2006. Headquarters Service Battery, 3rd Battalion, 319th Airborne Field Artillery Regiment, 82nd Airborne Division, sponsored the VMO.

As the discussion moves toward the current day, the JFB can track late or immediate ASRs and discuss with the fire support elements (FSEs) why a particular mission may go unsupported. The JFB also gives participants the chance to discuss specific concerns about ASR submissions.

This daily forum for discussion with each regional command and TF FSE has dramatically improved communications among the fires elements throughout the CJOA.

Like other JFB briefings, the IO briefing covers a three-day period, again focusing on the ATO-plus-two days. Thus the chief of staff can verify that IO is synchronized with lethal operational fires and ISR. It also allows him to ensure that regional command and TF operations are properly resourced. See Figure 3 for a sample CJTF-76 IO campaign for Regional Command 1.

The JFB not only is a tool for coordinating assets, but also is the forum for gaining the CJTF command group's approval (via the chief of staff) for the proposed prioritization and synchronization of lethal and nonlethal fires. As such, the JFB validates the distribution of operational assets two days in advance in accordance with the commander's intent.

The chief of staff's approval permits the JFEC to submit its ASRs to the battlefield coordination detachment (BCD) at the combined air operations center (CAOC). The chief of staff's approval also allows the collection manager to finalize his plans with the JCMB and the IO cell to proceed with the plans.

Synchronizing kinetic and non-kinetic operational fires between key cells is critical to success on a nonlinear, adaptive battlefield. The OEF 04-06 JFB has been a useful tool to coordinate such effects at the CJTF level.

We recommend that units preparing to deploy consider the OEF JFB concept and adjust it to meet their tactical and operational needs.

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Master Trainer Course—ABCS Interoperability

The Communications-Electronics Command (CECOM) Product Manager (PdM) Fire Support Command and Control (C^2) New Equipment Training Team (NETT) at Fort Sill, Oklahoma, is offering a new course that teaches how to integrate the Army battle command system (ABCS) suite: the Master Trainer Course.

The Army is fielding ABCS equipment to enhance planning, situational awareness and combat operations control. Because these systems must interface, the NETT's horizons have expanded beyond "stovepipe" standalone training.

Master Trainer Course Details. From the advanced FA tactical data system (AFATDS) to the Centaur, the four-week Master Trainer Course covers critical skills needed in the tactical operations center (TOC), battalion and higher, and the TOC's supporting units. The course offers hands-on training on the pocket forward entry device (PFED), rugged handheld computer (RHC), effects management tool (EMT) and ABCS integrated server (AIS). On other ABCS systems, students train via the simulator/stimulator training device (SISTIM).

The Master Trainer Course, a train-the-trainer course, is a one-stop ABCS interoperability training opportunity for Field Artillerymen, both Active Component (AC) and Reserve Component (RC), offered at Fort Sill or, as an option, units' home stations. Students must have basic AFATDS skills. After a short AFATDS review and database construction, students integrate all fielded ABCS systems.

During home station training, a brigade or higher echelon fire support staff may incorporate its common ground station (CGS) into the training. If a CGS is not available, the NETT uses service-based architecture software to simulate CGS traffic. For the AFATDS operator, it is an opportunity to interact with systems he might use in an ABCS environment.

Fire support equipment training is another component of the course. The training focuses on hardware setup, communications and message processing, and fire mission processing.

There is no final written test. Graduation depends on Soldiers' demonstrating their abilities to connect and establish communications with the ABCS systems.

Master Trainer Course		
Class #	**Dates**	**# Students**
1-2006	1-19 May	15
2-2006	10- Jul-4 Aug	15
3-2006	6 Nov-1 Dec	15
1-2007	9 Apr-4 May	15
2-2007	4-29 June	15
3-2007	23 Jul-17 Aug	15
4-2007	12 Nov-7 Dec	15
AFATDS SME Course		
Class #	**Dates**	**# Students**
3-2006	5-29 Sep	40
4-2006	10 Oct-3 Nov	40
1-2007	8 Jan-2 Feb	40
2-2007	12 Feb-9 Mar	40
3-2007	3-28 Sep	40
4-2007	8 Oct-2 Nov	40

Master Trainer Course and Advanced FA Tactical Data System (AFATDS) Subject Matter Expert (SME) Course Schedules for the Rest of 2006 and 2007

Other Digital Training. The Fire Support NETT offers other training.

AFATDS NETT. The last few units are completing their AFATDS new equipment fielding. Unit training to update to AFATDS Version 6.4Z also is ongoing at various locations worldwide.

AFATDS NETT GWOT Sustainment Training. This provides AFATDS sustainment training for units resetting after having redeployed from the Global War on Terrorism (GWOT). Units must request and fund the training.

AFATDS Distance-Learning Sustainment Training. This new distance-learning course is in its pilot phase and primarily will accommodate RC units, although AC units can participate in the training. It has a 120-hour program of instruction (POI) to be completed in 15 weekends over a 15-month period.

The course will be a cost-effective alternative to the unit's sending Soldiers on temporary duty (TDY) to the NETT location. The first course is projected to begin on 8 July.

For the distance-learning training, units will receive DVDs and VHS videocassettes via the mail that contain read-ahead materials for the various systems. These resources will enhance Soldier skills to maximize the training time and the final command post exercise (CPX).

AFATDS Subject Matter Expert (SME) Course. This is four weeks long at Fort Sill with an option for home station training and teaches AFATDS critical skills. The course emphasizes four areas: fire support, fire direction, sustainment training and development of standing operating procedures (SOP).

The SME course was designed for the RC Soldier, but anyone who needs training may attend. This course is an alternative for Military Occupational Specialties (MOS) 13C Tactical Automated Fire Control Systems Specialist and 13E Cannon Fire Direction Specialist conversion into MOS 13D FA Tactical Data Systems Specialist.

The course uses AFATDS compact computer units 2 (CCU2s) and AFATDS Tadpoles or trainer laptops similar to the Tadpoles but not ruggedized. Two students use each system, and they work in pairs during the class.

To graduate, individuals take the final hands-on and written tests. During the last few days after testing, Soldiers work on individual SOPs to take back to their unit.

For information about the courses, call James Eckhardt, NETT Training Developer, in CECOM Fire Support C^2 NETT Operations at commercial (580) 442-4892/4782 or DSN 639-4892/4782 or email him at james.eckhardt@sill.army.mil. See the figure for the Master Trainer and AFATDS SME Course dates at Fort Sill.

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Battalion Reset

INFANTRY, ARTILLERY OR *BOTH*?

By Lieutenant Colonel Christopher W. Irrig and Major Robert J. Bennett

On 3 November 2004, the 3rd Brigade (Stryker), 2nd Infantry Division (3/2 ID), finished the first Stryker brigade combat team (SBCT) combat tour in Iraq and returned to Fort Lewis, Washington. Veterans of 1st Battalion, 37th Field Artillery Regiment (1-37 FA), the SBCT's artillery battalion, achieved many firsts during the brigade's standup and operations overseas. But few could predict the challenges associated with the unit's next mission: reset and prepare to redeploy to Iraq within 18 months as *both* an infantry and artillery battalion.

Reset operations provided the battalion many lessons learned and set an acceptable pace to develop readiness for the Army. These operations will become more common as the Army continues to rotate units overseas.

This article captures the lessons learned from the reset period and focuses on three core areas: personnel, equipment and training. We also identify a training strategy to prepare the battalion for its core artillery mission while training and equipping the battalion as the fourth infantry battalion in the brigade.[1] The intent is to help other artillery battalions in the

A 1-37 FA officer fires during a high-performance shooting course for the battalion officers at Camp Rilea, Oregon.

same situation as the Army continues to transform and fight the Global War on Terrorism (GWOT).

Personnel Reset (November 2004-February 2005). After its return from Iraq, 1-37 FA changed a great deal. Both the battalion and brigade commanders moved to new duties, and the battalion received a new command sergeant major (CSM). The field grade and battery command slate stayed the same during this period, which eased much of the turbulence during the personnel reset.

The battalion was overstrength, and the once cohesive unit now comprised two large groups: those who had deployed and those new to the Army.[2] The number of personnel actions these groups needed quickly overwhelmed the battalion's S1 shop.

Once Stop Loss was no longer in effect, about 150 highly trained combat veterans left the battalion. Those making a permanent change of station (PCS) needed to out-process, which included evaluations and end-of-tour awards. Because awards presented in Iraq covered only the time of the Operation Iraqi Freedom (OIF) rotation, the shop processed more than 150 awards during the period when many Soldiers on post, (including most of the S1 shop) were on block leave. Soldiers approaching their end term of service (ETS) date required both evaluation and award support as well as Army Career and Alumni Program (ACAP) processing and counseling.[3]

Soldiers newly assigned to 1-37 FA also needed major support from the battalion's S1. More than 65 new Soldiers were assigned to the battalion between 15 September 04 and the battalion's return. They were assigned to the rear detachment for the intervening three months.

Because most of the new Soldiers were fresh from advanced individual training (AIT) and many of the brigade's leaders were overseas, discipline problems plagued the rear detachment. The detachment was not equipped to efficiently process the more than 20 discipline actions required, so they were not processed until the battalion's chain of command returned. Processing, tracking and actioning the results of this discipline surge was a third priority for an already overworked S1 section.

During this period of turbulence, we quickly determined that the battalion should augment the personnel section with both NCOs and officers. Both the battalion commander's and the sergeant major's drivers became S1 clerks, and two of our lieutenants who were leaving the service were assigned to the S1. One of the lieutenants and a departing S2 NCO took charge of Uniform Code of Military Justice (UCMJ) actions and worked closely with both the batteries and brigade legal points of contact (POCs).

A newly assigned lieutenant and a 42A30 Personnel Services sergeant assigned to the S1 monitored incoming Soldiers' needs, including starting basic allowance for housing (BAH), settling travel vouchers, updating Soldier's Group Life Insurance, etc. They also ensured that batteries received an equitable distribution of personnel, based on the personnel turbulence in the unit.

The S1 and S1 NCO-in-charge (NCOIC) oversaw day-to-day operations and closely monitored departing Soldiers. Weekly staff calls and twice weekly meetings with battery executive officers (XOs) and the battalion XO ensured that all departing personnel received the support required.

Not every Soldier left the battalion with his awards and evaluation completed, but the battalion was more successful than most in the brigade. A leader formerly associated with the battalion remarked that, "Something will always get lost during a relief-in-place (RIP)." Given the scope of the personnel RIP that occurred between November 2004 and February 2005, the survival of the S1 section was remarkable, and the degree to which it achieved its mission was simply amazing.[4]

By early March, the most difficult phase of the personnel reset was complete, and the battalion end strength was slightly above its modified table of organization and equipment (MTOE) allocation of 291 personnel. Soldiers would continue to leave the unit during the next six months, but the most significant period of turmoil had ended.

Throughout this personnel transition period, the S4 and the batteries focused on the reset milestone of equipment and property consolidation.

Equipment Reset (October 2004-March 2005). The equipment reset presented a different challenge for the battalion leadership. This reset was a three-phase operation that began in Iraq in October 2004 and ended in March 2005. The three phases were signing over the battalion's equipment in Iraq, accepting equipment left behind at Fort Lewis from both the installation and MTOE property books and integrating the equipment left behind with the equipment brought back from Iraq into a consolidated property book. To meet Army command supply discipline program standards, battery commanders had three complete change-of-command inventories during this six-month period.

Our sister fires battalion, 2-8 FA, supports 1st SBCT, 25 ID, and completed the transfer of authority with our battalion in theater in October 2004. Part of this transfer included signing over our howitzers, vehicles and the majority of our MTOE equipment, to include basic issue items (BII). The transfer began with close coordination during 2-8 FA's pre-deployment site survey and continued through 1-37 FA's occupation of Fort Lewis.

During the pre-deployment site survey, the 2-8 FA battalion XO went to Iraq with the proposed left-behind equipment list from 2-8 FA. In a series of overseas meetings, both battalions ensured that for each item that 2-8 FA would sign for in Iraq, a replacement item waited at Fort Lewis (left behind by 2-8 FA). If 2-8 FA suffered a shortage, 1-37 FA made up for it by leaving the equipment in Iraq.[5]

After settling on MTOE equipment distribution, 2-8 FA conveyed its needs for other equipment. This included eye protection, Garmin wrist-mounted global positioning systems (GPS), computers and other Iraq-specific gear. 1-37 FA batteries transferred this equipment to 2-8 FA and further accounted for it on an Iraqi installation hand receipt.[6]

2-8 FA had left its equipment and crew-served weapons at Fort Lewis with a Directorate of Logistics (DOL) contractor, so 1-37 FA could sign for it at the end of its block leave in January 2005. When 1-37 FA returned from block leave, the battery commanders immediately focused on signing for equipment from DOL's caretaker contractor, the installation property book office, and accepting military vans (MILVANs) returning from Iraq.

The personnel turmoil and lack of mid-level NCOs required younger sergeants to inventory and sign for their sections' MTOE equipment that had been left behind. Inexperience led to a failure to identify some shortages, especially among end-item components. Reasons for shortages ranged from unintentional bookkeeping errors committed by the 1st Brigade property book office (a four-man shop that successfully processed 31 battery-level changes-of-command in less than two weeks before the shop deployed to Iraq) to savvy NCOs assuming that "nice to have" equipment would be hard to come by in Iraq, so they sent it forward against the wishes of their chains of command. Unfortunately, the MTOE equipment discrepancies were not all identified until the battery change of command inventories of consolidated property books began in March and lasted through August.

Installation property also proved to be a contentious issue, as the commanders who had taken the guidon overseas were now required to sign for a complete suite of property while simultaneously accounting for a rear detachment that last had been inventoried by their predecessors more than 14 months before. Because the rear detachment hand receipts were managed by a different person at the installation property book office, two commanders did not know that a second hand receipt existed until their change-of-command three to six months later.

The battalion MILVANs arrived during the block leave period, and DOL moved them to make space for other deploying units. Finding the correct MILVANs became an adventure; moving them to battery areas where they could be unloaded was a greater adventure due to the limited amount of material handling equipment.

Overcoming the challenges of collecting each battery's equipment was a task that required each battery commander's total attention, but it was not the most difficult phase of the equipment reset. That challenge was consolidating the three different hand receipts into a single manageable property book with a reasonable expectation that all property would be accounted for and properly hand receipted.

In a similar operation to 1st Brigade's deployment, the 3rd Brigade's property book office had to assimilate 31 complete property books from 155 property sources, to include left-behind equipment property books, rear detachment MTOE property books, installation property book new issues, rear detachment installation property books and MILVAN contents. Commanders had to use all their property accountability tools to account for losses, but the report of survey was the most common.

For 1-37 FA, this meant managing six MTOE reports of survey, three installation reports of survey and several individual property reports of survey all at the same time. The total accepted loss to the government was more than $250,000.

By mid-March, the battalion was manned, equipped and looked like a battalion again. After gaining accountability of personnel and equipment, much work still had to be done, such as installing radios, advanced FA tactical data system (AFATDS) and force XXI battle command brigade and below (FBCB^2). These systems all required testing, calibration and verification.

The week before the first live-fire event in early March, the batteries were still signing for and installing equipment while conducting pre-combat checks (PCCs) and pre-combat inspections (PCIs). But the battalion was ready to refocus on training and preparing for the next OIF rotation, now only 15 months away.

Initial Training Reset (February-April 2005). Early during the reset phase the *Arrowhead* 3rd SBCT Commander made it perfectly clear that 1-37 FA must be prepared to execute traditional artillery missions and own and dominate its own battlespace, the same as our sister infantry battalions. Where does a battalion command team turn in order to develop the way ahead? Nowhere could we find the training strategy to achieve a

"Redleg Rifleman" focused on individual Soldiers' infantry skills, including short-range marksmanship.

balance between artillery proficiency and integrated infantry training, specifically Infantry Battle Drills 1 through 6, under an accelerated reset timetable. Moreover, the Army force generation (ARFORGEN) model does not adequately address artillery battalions with in-lieu-of infantry missions.

To set the conditions for success during the training reset period, batteries had to complete the personnel and equipment phase, in that order, to ensure section chiefs, gunners and key leaders were assigned and equipment was accounted for at all levels. During this period, the battalion leadership simultaneously established a multi-focused training strategy and acquired the training resources to fulfill the brigade commander's guidance.

After section chiefs inventoried their new equipment, they focused on preparing for the battalion safety certification for key leaders, gunners testing and section certification. The new battalion CSM leveraged his experience as the Field Artillery's Master Gunner and completely rewrote the battalion section certification and safety certification programs. This was critical to ensure live-fire safety during two battalion-level live-fire exercises (LFXs) in March and April. By the end of March, each fire direction center (FDC) and howitzer section had completed live-fire certification.

At the end of the brigade's April field training exercise (FTX), the firing batteries had completed battery-level certification similar to the old Artillery Table XII. The headquarters service battery's (HSB's) specialty sections, including radar, meteorological (Met), survey, tactical operations center (TOC), and the administration and logistic operations center (ALOC), completed their certifications under the direction of the battalion XO, S3 or HSB commander. The battalion now was fully trained in artillery skill sets at the battery level and was capable of deploying with some risk.

A technique that might have made the initial battalion certification easier is Fort Sill's deploying several mobile training teams (MTTs) to help reset units. The Infantry Center, at Fort Benning, Georgia, currently deploys MTTs[7] to resetting infantry battalions, and this brigade benefited significantly from their efforts.

Throughout the year-long deployment to OIF, the battalion and the brigade fire support personnel had lost a great deal of their technical and tactical artillery experience due to the reality of operations on the ground. Most artillerymen had focused more on information operations (IO), civil-military operations (CMO) and in-lieu-of infantry missions during the deployment. As a result, the battalion's artillery and fire support proficiency suffered. The personnel turnover of approximately 50 percent during the reset also created a situation in which the MTTs were needed.

> 1-37 FA "rapidly" deploys by land, air or sea to a designated area of operations and provides full-spectrum fires in support of the *Arrowhead* BCT [brigade combat team]. Be prepared to conduct area security operations as part of a brigade economy-of-force mission.

Figure 1: 1-37 FA's Mission Statement

Having a fire support MTT help infantry battalion commanders train and certify their 13F Fire Support Specialists is essential to achieve reset milestones. Most 13F personnel in the infantry battalions gained a year's worth of combat experience but were not able to maintain their FA technical and tactical skills in theater.

We were unable to get a fire support MTT to help 1-37 FA reset. Recently certified observers on the hill processing digital fire missions for firing batteries would have enhanced the training and certification period through which 1-37 FA struggled in March and April 2005.

At the firing battery level, two MTTs for resetting battalions are required. One team should focus on the technical aspects of AFATDS and manual fire direction. Fire direction personnel also execute non-standard missions more frequently than their traditional missions in theater and lose much of their technical expertise.

Finally, the battalion's 13B Cannon Crewmembers need an MTT to help set up and employ the certification program. Currently, fires battalions do not have a higher headquarters to help in the certification process, and many BCTs cannot leverage the experience and knowledge from their sister fires battalions because those battalions also are going through either a deployment or reset.[8]

The actual composition and timing of the MTTs must be coordinated with the Department of Training and Doctrine (DOTD) at Fort Sill, based on the units' reset schedule.

The battalion accomplished a great deal in less than six months, but it still was not proficient at battalion- and brigade-level operations. The battalion also had not achieved the required readiness for its in-lieu-of infantry mission.

At this point, the reset process was making great progress, and the battalion now had to focus on an all-encompassing brigade tasker, Operation Warrior Forge 2005, and its preparations to execute area security operations.

Warrior Forge and Redleg Rifleman (May-October 2005). By May 2005, it had been six months since the brigade was in Iraq and the geometry of the battlefield had changed a great deal due to the enemy's evolving tactics, techniques and procedures (TTPs) and Coalition and Iraqi successes. As a result, the brigade commander validated one key assumption: the battalion would have an area of operations (AO) during the next OIF rotation, and would be responsible for conducting full-spectrum operations against the enemy in a nonlinear, noncontiguous battlefield. (See the mission statement in Figure 1.)

Now with clarity of its mission, the battalion had to "adjust fire" and develop a new mission essential task list (METL) with a corresponding training strategy. (See Figure 2 for the 1-37 FA's METL.) At a minimum, the battery-level training had to include cordons and searches, establishing traffic control points (TCPs) and executing Infantry Battle Drills 1 though 6 to standard.

The greatest challenge the battalion leadership faced was developing the training needed to support turning the battalion into an infantry-focused organization while simultaneously maintaining the core artillery competencies. The adjusted training schedule also needed to fully develop the battalion's skills and expertise as infantrymen with the realization that it only had four FTXs before it deployed.

The first major exercise the battalion conducted was Operation Warrior Forge, the 2005 Reserve Officer Training Corps (ROTC) Advanced Camp at Fort Lewis. 1-37 FA was responsible for executing the fire support lane that gave cadets the chance to complete the call-for-fire commissioning requirement and allowed them a day to interact with Artillery Soldiers to learn about the branch.

More than 3,000 cadets finished the

training lane during the six-week course with ROTC allocating more than 10,000 rounds to execute the training. Also, the regional ROTC command received extensive engineer support, and the ROTC fire support committee worked with the battalion to achieve ROTC and battalion objectives during the exercise.

The battalion divided the ROTC training into three blocks. One firing battery was tasked to provide most of the fire support for the cadets for a two-week block. During the second two-week block, the firing battery supported an FA capabilities exercise for three hours in the early mornings of training days but otherwise could conduct battery training without interference from outside entities. (Battery commanders were advised to begin individual short-range marksmanship and basic squad-level maneuvers during this training time.) The third battery served as the battalion "Red Battery."

The battalion executed officer professional development (OPD) sessions and detailed relief-in-place briefings, so the training standards remained consistent for all cadets. Additionally, the OPDs allowed units to share unique lessons learned: B Battery briefed its peers on how to use engineer support to construct a firebase to standard, A Battery taught its peers how to conduct a two-gun raid and C Battery taught the battalion's leaders how to break down a prepared position efficiently.

Every two weeks, the firing batteries rotated through the different roles. HSB supported all ROTC operations with Met and radar, and the staff began to plan first quarter training opportunities. Also during this period, all three firing batteries changed commanders and field grade rotations occurred.

At the end of Warrior Forge, the battalion had achieved a baseline capability for area security missions similar to the training in FA tasks level achieved in April. Moreover, the battalion had fired more than 10,000 rounds safely, all leaders had had an opportunity to fire live missions, gunners had served as chiefs and all Soldiers were experts in their FA skills.

In July 2005, the battalion operations officer developed a training plan called "Redleg Rifleman" that finished preparing the battalion's Soldiers to conduct area security operations. Redleg Rifleman initially focused on individual Soldiers' infantry skills and ended with a battery-level force-on-force cordon and search during the brigade's October rotation to the Yakima Training Center, Washington.

Battalion
- Deploy.
- Conduct counterfire operations.
- Control delivery of fires.
- Conduct combat service support (CSS) operations.
- Execute battle command.
- On order, conduct area security.

Battery
- Deploy.
- Provide indirect fires.
- Conduct tactical moves.
- Defend battery area and materials.
- On order, establish traffic control points (TCPs).
- On order, conduct cordons and searches.

Headquarters Service Battery
- Deploy.
- Perform CSS operations.
- Conduct tactical moves.
- Defend battery areas and materials.
- On order, establish TCPs.

Figure 2: 1-37 FA's Mission-Essential Task List (METL)

In June, the S3 coordinated with the Army's marksmanship unit from Fort Benning to conduct a high-performance shooting course for the battalion officers at Camp Rilea, Oregon. This very intense, week-long course emphasized shooting with optics—advanced combat optical gunsights (ACOGS), electro-optical technology holosights (EOTechs) and M68 close combat optics—shooting on the move and behind buildings, using basic reflexive firing techniques and setting up and running a short-range marksmanship range.

While the officers conducted this training offsite, the battalion CSM and NCOs conducted similar refresher training and then began to train squads to conduct Infantry Battle Drills 1 through 6 at the military operations in urban terrain (MOUT) site. They used subject matter experts (SMEs) from the 1st Special Forces (SF) Group and senior NCOs from the infantry battalions to conduct the training.

When the battalion leadership was confident in the subordinate leaders' abilities in short-range marksmanship and the infantry battle drills, the battalion reorganized from battery-level operations into platoons. Specifically, the howitzer sections received the mission to fight as infantry squads or two four-man fire teams, when required; they had to retain the ability to conduct crew drills, when necessary.

We adopted much of the training methodology from the Engineer Branch to ensure balance in our artillery and infantry skills. For decades, the engineers have had to execute two missions: conducting engineer operations and fighting as infantry.

Every Soldier in the battalion belongs to a fire team, and each fire team leader trains his fire team. One team leader often is the ammo team chief, and the gunner leads the second team. As challenging as it was for our HSB, it was able to integrate the radar, Met and survey personnel, the field feeding team and combat repair team into fire teams.[9] Every fire team first conducted Battle Drill 6: Enter and clear a room with dry fire and blanks. The team then executed the drill with live ammunition during the day and night using optics and tactical lights. We validated the training at the state-of-the-art shoot house in September 2005 and developed a maneuver training lane using the urban assault course at the Yakima Training Center as the culminating event during the brigade LFX in October 2005.

This month-long training exercise was the capstone exercise for the battalion with three training lanes through which all three firing batteries rotated. The first training lane consisted of a firing battery providing close supporting fires for three maneuver company combined arms live-fire exercises (CALFEXes) at the MultiPurpose Range Complex (MPRC) on Fort Lewis. Each firing battery habitually is associated with an infantry battalion (three companies) to respond quickly as part of a Stryker ready task force mission.

The second lane focused on a firing battery conducting a live counterfire battle drill with the brigade fires and effects cell (FEC). At the same time, the battery received notional intelligence about a known enemy high-value target (HVT) that was using a main supply route (MSR) to smuggle weapons.

The battery was forced to establish a TCP to interdict and capture the HVT.

The intelligence at the TCP forced the commander to the HVT's known location at the urban assault course. The battery commander received the mission to capture the HVT and had to develop a battery operations order (OPORD) and time line, rehearse the OPORD and then execute the mission.

During the execution phase, the HVT was not located at the objective but at another village several hundred meters away. The intent was to see how the commanders used initiative-based decision making to capture the HVT at the new location. At both locations the opposing force (OPFOR) occupied buildings. Both the OPFOR and battery personnel were issued simulated munitions (red/blue paint ball ammunition fired from an M16A2 with a substitute bolt) that actually *hurt* on impact on exposed skin.

The final lane consisted of each battery going through short-range marksmanship validation and a live-fire shoot house. The intent was to refamiliarize the Soldiers with reflexive firing techniques with optics. The new Yakima shoot house has a separate after-action review (AAR) facility where fire teams and squads can review their movement techniques and actions in each room.

The training was very realistic. Both friendly and enemy manikins in the rooms screamed and fell to the floor when shot. Initially, the battalion relied on the infantry SMEs to train senior leaders, but after several training iterations, our NCOs and officers could provide the expertise and oversight to ensure a safe live-fire event for the battalion.

The battalion focused on special skills training as it prepared for a mission rehearsal exercise (MRE) at the National Training Center (NTC) at Fort Irwin, California, in February. The special skills training consisted of several week-long courses, such as a Team Leaders Course and a Master Breachers Course.

The Team Leader's Course was similar to the brigade's pre-ranger course. It emphasized patrolling, nine-line casualty evacuation (CASEVAC), crew-served weapons training, marking a landing zone (LZ) and FBCB^2 training. With instructors from the 2-75 Ranger Regiment and several master breachers from the infantry battalions, the Master Breachers Course focused on manual, explosive and ballistic breaching techniques. Soldiers used these techniques on several steel and wooden doors and iron fences.

Both courses focused on small unit leadership, team building and instilling confidence in junior leaders. They also focused on developing well trained leaders with a solid foundation of initiative-based decision making.

Since the beginning of the "Redleg Rifleman" program in June 2005, the battalion has made significant progress toward turning the artillerymen into infantrymen. 1-37 FA has well trained firing batteries that also are highly trained as fire team and infantry squads. Before the MRE, the battalion focused on platoon- and battery-level maneuver operations. It also validated FA skill sets with gunners testing and howitzer and FDC certification.

During the MRE at the NTC, the scenario dictated a specific AO for the battalion. At that point, battalion-level maneuver operations included several convoy live fires and at least one mission that required massing the battalion's fires. Thus the battalion achieved a balance between artillery and infantry training proficiency from the individual level to battalion-level collective training.

1-37 FAs New Mission. The battalion's primary mission will be to control a portion of the brigade's battlespace as a maneuver task force (TF) *and* provide close supporting fires and counterfire for a forward operating base (FOB) or Stryker-ready TF, when necessary. To accomplish this mission the brigade's anti-tank company (C/52 IN) will be assigned to the TF. It brings 12 Stryker vehicles to the TF. Three will be the antitank guided munition (ATGM) Stryker variant, eight will be the Stryker infantry carrier variant (ICV) and one will be a fire support (FS-3) Stryker. (The company commander and XO each will have one of the ICVs.) These Stryker vehicles will give the TF commander an enhanced capability in his AO.

C/52 IN will give 1-37 FA a maneuver capability for the TF, either in an overwatch position or a support-by-fire position, and provide tube-launched, optically tracked, wire-guided missile (TOW) fires, as necessary. The Stryker vehicles also will transport Soldiers for an operation or on convoy security missions, enhancing force protection for the TF Soldiers throughout the AO. Finally, the Strykers will be prime movers for the M198 howitzers, replacing the five-ton trucks.

In TF 1-37 FA, a howitzer crew looks a lot like an infantry squad, not only on paper, but also in reality.

Resetting the Multi-Mission FA Battalion. Future resetting units first must identify just what is expected of the unit from its proposed future mission statement. Based on the contemporary operating environment (COE), a "pure artillery" battalion may be the exception; artillerymen more likely will have both a fire support and another role to play in an organization.

Ideally, resetting units need a comprehensive almost "off-the-shelf" training strategy for resetting units, training strategies geared toward a pure artillery battalion and (or) any combination of a transportation or infantry unit or even FOB management. These off-the-shelf training plans should be linked to the Fires Knowledge Network (FKN) for future reset commanders to access.

Resetting units must recognize ahead of time the huge turnover in personnel and plan to augment their personnel and administrative section to keep pace with projected requirements.

In terms of equipment reset, commanders must develop an equipment synchronization matrix. This matrix is similar to how a unit builds combat power during reception, staging, onward movement and integration (RSOI) operations at the training centers. Specifically, it prioritizes which vehicles or howitzers per battery will go through contracted services first and what risk you can accept in terms of those vehicles that will not be ready for the first field exercise. Commanders also must decide which prioritized vehicles must have radios, AFATDS and FBCB^2 installed to make the required changes to the inherited fleet of vehicles.

The training reset can begin only after completing the first two phases, but the unit can develop a detailed training plan early. A unit cannot train a howitzer section or infantry squad before identifying the requirement for the section or squad and which sections will have the mission. The designated section or squad must have the equipment to train on. The unit must develop a realistic training strategy that takes into account the personnel transitions, section certification requirements, equipment availability and resources needed for training events.

Clearly, Fort Sill has a major role in facilitating and expediting the training reset phase. Because of the frequency of in-lieu-of missions and units' limited artillery experience in theater, battalions tend to lose a great deal of technical and tactical artillery-specific skills. Fort Sill must lead in developing specific MTTs based on the resetting units' organiza-

tions and coordinate with these units for the teams to help during the initial train-up period. Specifically, teams must address fire support elements (FSEs) across the Stryker brigades and modular BCTs, the FDCs at both the battalion and battery levels, and howitzer teams to support each fires battalion.

Reset operations are both challenging and rewarding. Leaders at every level can see real progress every day as they continue to assess their organization's readiness. Leaders also understand the links between personnel, supply and training readiness. This allows us to develop a generation of leaders who think holistically and can respond to multiple challenges simultaneously and a battalion that is agile, adaptive and ready to deploy, fight and win decisively—regardless of its mission.

Lieutenant Colonel Christopher W. Irrig commands the 1st Battalion, 37th Field Artillery (1-37 FA), part of the 3rd Stryker Brigade Combat Team (3rd SBCT), 2nd Infantry Division, at Fort Lewis, Washington. He also served as the Executive Officer (XO) for the 75th FA Brigade, III Corps Artillery, Fort Sill, Oklahoma, and deployed as the 75th Exploitation Task Force in Operation Iraqi Freedom (OIF) in 2003. He commanded D/1-5 FA (Alexander Hamilton Battery), 1st ID, at Fort Riley, Kansas.

Major Robert J. Bennett is the XO for 1-37 FA at Fort Lewis. He served as the S3 for 1-37 FA during OIF and for the majority of the reset period recently completed by the unit. Previously, he was the Deputy Operations Officer for Task Force Olympia, I Corps, in Mosul, Iraq. He also served as a Deputy Branch Chief in the Readiness Division, Army G3, at the Pentagon. He commanded Service Battery, 2-3 FA, 1st Armored Division, in Germany, deploying to Bosnia in support of Operation Joint Endeavor.

Endnotes:

1. During the battalion's first Operation Iraqi Freedom (OIF) rotation, the battalion executed missions across the spectrum of conflict, including managing the Tigress River Valley south of Mosul. The lessons learned from these operations were detailed in "Maneuver and Other Missions in OIF" by Lieutenant Colonel Steven A. Sliwa in the March-April 2005 edition.
2. On 3 November 2004, the battalion had 495 personnel assigned and 291 authorized. This included both the personnel assigned to the unit in Iraq and 106 personnel, mostly 13B10s, who had been surged to Fort Lewis by the Human Resources Command (HRC) in anticipation of a personnel exodus after the Stop Loss/Stop Move was lifted.
3. Seventy-four Soldiers from 1-37 FA separated from the Army between December 2004 and February 2005.
4. One action that was not completed to standard was awarding the Combat Action Badges (CABs). The badge was not authorized until after the reset period. Gathering the required witness statements and submitting awards was difficult because many of the Soldiers involved had departed. Recognizing Soldiers who earned the award with other units under 1-37 FA was especially difficult. Because there were no excess personnel to augment the S1 shop to focus exclusively on the CABs, the requirement to execute this mission fell as an additional duty on four S1 Soldiers. The situation was exacerbated by confusion about the composition of the packet and a lack of published standards for its completion at the brigade, corps and Army levels. This action still is incomplete; however, significant progress has been made.
5. One example of unequal property books between sister battalions was Force XXI battle command brigade and below (FBCB^2) systems. Because 1-37 FA had a full complement of FBCB^2 systems in Iraq and 2-8 FA was not fielded completely based on the overseas need, 1-37 FA accepted a shortage of 16 systems in its new equipment set. The equipping challenge was limited to a clerical problem, but the training expectations of seasoned battalion leaders had to be downgraded as the equipment readiness status of the battalion declined instantaneously.
6. The Iraqi installation hand receipt process worked well for 2-8 FA as it transitioned with 4-11 FA, part of the 172nd Separate Infantry Brigade in Alaska, the following year. Many of the advanced technologies purchased to meet immediate, in-theater needs remain there with the third rotation of SBCT fires battalions. Presumably, these capabilities will remain in place when 1-37 FA returns this summer. Given these technologies' approximate $1.2 million value added, the savings for taxpayers is significant.
7. Among the MTTs deployed from Fort Benning to Fort Lewis to support the 3/2 SBCT reset were the Mortar Leader's Course, Sniper Course, Master Breachers Course and a Warrior Fitness Team. A battalion in the brigade served as a host for each of these MTTs and garnered required resources for their training programs. Each battalion received the required number of slots to the courses, to include 1-37 FA (based on its area security mission).
8. As one example, 1-37 FA lost the ability to shoot digitally with gun display units (GDUs) on its return from OIF. It was not only due to the fact that many of the GDUs were unserviceable, but also to a lack of experience and knowledge in troubleshooting the GDUs, both in the FDC and on the gun line. An MTT from Fort Sill would have highlighted the importance of shooting digitally and ensured that the skills needed were in the battalion before it redeploys.
9. The field feeding team and combat repair team are assigned to the brigade support battalion but habitually are associated with the battalion for field exercises and deployments.

Fires Center of Excellence—Logo Contest

The Field Artillery School at Fort Sill and the Air Defense Artillery School at Fort Bliss are standing up the "virtual" Fires Center of Excellence (CoE) on 1 June. Ultimately, the ADA School will move to Fort Sill, physically establishing the Fires CoE.

The Fires CoE will be the Army's center of excellence for joint and coalition fires and the home of the Army's FA and ADA. This new center needs a logo.

The Chiefs of FA and ADA are sponsoring a contest to design the Fires CoE logo with the contest deadline 1 May. All military, regardless of whether or not they are FA or ADA, military retirees, military dependents and DA or other civilians are eligible to compete. The designer of the winning logo will receive $1,000 with the designer of the Second-Place logo receiving $300 and Third-Place winner receiving $200. The FA and ADA Associations are funding the awards. The winning logo potentially could become the Fires CoE logo.

The logo should be a simple, catchy full-color design. It should be crisp and clear and of high quality, making it easy to reproduce for use post-wide on items such as letterhead, conference folders, briefing slides, etc. The winning design also may be produced by Fort Sill as raised-surface plaques for walls, the main gate entrance, the front of podiums, etc.

The logo must be 8 by 10 inches with a 300 dpi quality. If submitted electronically, it also must be 8 by 10 inches in 300 dpi that is saved in jpg format at the medium setting, at a minimum.

Submissions must include the designer's full name, address, telephone number, email address and, as applicable, military rank, job and unit listed on a sheet separate from the logo. Submissions may be emailed to Ms Shirley Dismuke, Office of FA Strategic Communications, at shirley.dismuke@sill.army.mil or mailed to Commander, US Army Field Artillery Center and Fort Sill, ATTN: ATZR-T, Fort Sill, Oklahoma 73503. If FedExing the logo, send it to Commander, US Army Field Artillery Center and Fort Sill, 455 McNair Hall, Room 210, ATTN: Shirley Dismuke. The design must be received by 4:30 P.M. on 1 May. If contestants have questions, they can call Ms. Dismuke at commercial (580) 442-8075/3944 or DSN 639-8075/3944.

A panel of visual information and strategic communications specialists plus selected FA and ADA senior leaders will determine the winners from the anonymous contest submissions and determine if the First Place logo will be used as the Fires CoE logo. The judges' decisions will be final.

All contestants waive copyrights to the logo designs that become the property of the Fires CoE. Submissions will not be returned. The winners will be notified by 1 June with the logo printed in editions of FA and ADA magazines.