Field Artillery

A Joint Magazine for US Field Artillerymen

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ARTICLES

DEPARTMENTS

Front Cover: Smoke billows from the newly fielded M777 lightweight 155-mm towed howitzer as the first USMC FA Cannoneers fire the howitzer during military occupational specialty (MOS) training on 23 March 2005 . The system began fielding to the Marines in May and eventually will replace the aging M198 155-mm towed howitzer in the Army and Marine Corps. (Photo by Fred W. Baker III)

PURPOSE: (as stated in the first ***Field Artillery Journal*** in 1911): *To publish a journal for disseminating professional knowledge and furnishing information as to the Field Artillery's progress, development and best use in campaign; to cultivate, with the other arms, a common understanding of the power and limitations of each; to foster a feeling of interdependence among the different arms and of hearty cooperation by all; and to promote understanding between the regular and militia forces by a closer bond; all of which objects are worthy and contribute to the good of our country.*

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Redleg Hotline & Email
(Organization, Material, Doctrine and Training)
DSN 639-4020 or (580) 442-2204 (24-Hours)
redleg@sill.army.mil

CounterStrike Task Force
https://counterstrike.army.smil.mil

Field Artillery Home Page & Email
sill-www.army.mil/famag; famag@sill.army.mil

By Order of the Secretary of the Army:
Peter J. Schoomaker
General, United States Army
Chief of Staff

Official: Sandra R. Riley
SANDRA R. RILEY
Administrative Assistant to the Secretary of the Army, 0520308

David C. Ralston
Major General, United States Army
Field Artillery School Commandant

Editor: Patrecia Slayden Hollis

Art Director: Fred W. Baker III

Managing Editor: Reta L. Rogers

Assistant Editor: Tonya S. Goforth

Field Artillery Azimuth 2005 2015

By Major General David C. Ralston

Photo by Jason L. Austin, USAREUR Public Affairs

Field Artillery traces its heritage of providing the maneuver commander timely, accurate fires back to 17 November 1775 as one of the oldest branches in the Army. Throughout America's proud history, our branch has earned the title of *King of Battle*—a title we will retain as we chart our azimuth for the next 10 years.

These are exciting times—times of change with an Army at war and, simultaneously, transforming into a modular Army while rapidly moving toward a future combat system (FCS)-based force. Never has the Army faced so much change and never has it had so many opportunities.

The Field Artillery is sharing in those opportunities as we build a more capable force for 21st century warfare. We are on track with our developments, and we will "stay the course." Our azimuth is to develop professional Field Artillery Soldiers and leaders who are instilled with the Warrior Ethos and optimally trained, organized and equipped to provide FA fires and coordinate effects for the joint force across the range of military operations and to serve as combat multipliers for the force commander as adaptable, multifunctional assets. Our azimuth focuses on people—FA Soldiers and leaders.

Certainly, in the near future as we execute the Base Relocation and Closure- (BRAC)-directed move of the Air Defense Artillery School to Fort Sill, we will begin to share the synergy of our combined capabilities as the Army's new NetFires Center of Excellence (CoE). This synergy will bring opportunities we haven't yet considered. Because the detailed plan for and timing of this move is yet to be determined, I will discuss this more in future columns.

During the next 10 years, we must emphasize three of the many aspects of our branch azimuth: effects coordination, precision fires and adaptable Soldiers and leaders. Although all aspects of the azimuth are designed to ensure the branch is relevant and effective in Army and joint operations in 2015 and beyond, emphasizing these three aspects keeps us focused on our critical core competencies.

First, for years we have espoused effects coordination—both lethal and nonlethal. We are very good at training and developing Field Artillerymen to coordinate and synchronize lethal effects, but we are not as good at developing them to coordinate and synchronize nonlethal effects.

Today's Global War on Terrorism (GWOT) is not an aberration in the history of our nation's conflicts; one easily can predict that the nonlethal aspects of the US approach to warfare in Iraq and Afghanistan will remain for future stability and support operations (SASO), even in higher intensity conflicts. Our effects-based approach carefully considers the effects of all actions on the local population and its infrastructure, communications with the local population to win their confidence and cooperation, and assistance to the affected nation to become operational again and take

Photo by Fred W. Baker III

First Sergeant William Blasengame leads his team through a military operations in urban terrain (MOUT) site at Camp Gruber, Oklahoma. Blasengame is with the 1st Battalion, 158th Field Artillery (1-158 FA), Multiple-Launch Rocket System (MLRS), Oklahoma Army National Guard. About 150 Soldiers from the battalion are training as a security force company in preparation for a deployment to Iraq in December. Developing adaptive Soldiers and leaders is the third area of emphasis in the Field Artillery's azimuth.

responsibility for their country.

With that approach as a given, we must train and develop Field Artillerymen to set them up for success as effects coordinators (ECOORDs). We must start by educating FA lieutenants in the basics of coordinating and synchronizing tactical information operations (IO), civil-military operations (CMO), civil affairs (CA), electronic attack (EA) and psychological operations (PSYOP). This doesn't mean that we don't need to concentrate on the lethal aspects of mortars, FA, Army air and joint fixed-wing aircraft as we always have done. But we must be aggressive in meeting the challenges of the increasing complexities of current and future environments and grow ECOORDs at all echelons to be prepared for their expanding missions. Field Artillerymen are performing these nonlethal missions down range in Iraq and Afghanistan, and it is time we start training them for those missions in the schoolhouse.

The second area of emphasis is precision fires. We have both cannon and rocket precision-guided munitions (PGMs) under development and being fielded and fired down range that will change the way the Army fights. For the first time, the Army can employ tactical FA fires effectively to take out high-payoff targets (HPTs) precisely in urban terrain or employ them closer than ever to friendly troops—PGMs with no duds, smaller footprints and accuracy to within 10 meters.

But when I use the word "precision," I mean more than PGMs—we must have precision capabilities for fires that cross the spectrum of conflict. We need precision in every aspect of the elements of accurate, predicted fire—from target acquisition (TA) to position location to meteorological (Met) data.

Developing adaptive Soldiers and leaders is the third area of emphasis in this azimuth. Field Artillerymen have performed *incredibly* in such nonstandard roles as commanders of motorized infantry task forces or maneuver brigade combat teams (BCTs) and as motorized Infantrymen, including executing tasks such as cordons and searches, raids, patrols, convoy operations and quick-reaction force (QRF) operations, all in urban terrain; as military policemen, unexploded ordnance personnel and nonlethal ECOORDs, including at the company fire support officer (FSO) level; and more. Our branch—perhaps more than any—has provided force commanders with adaptable, versatile, multifunctional Soldiers and leaders who truly are combat multipliers. As a branch, we need to develop and enhance their abilities to be what the Chief of Staff of the Army calls, "Pentathletes." And to support these Pentathletes, we must provide them adaptive systems and capabilities.

Our azimuth for 2005 to 2015 leverages advanced technologies and the high operational tempo (OPTEMPO) of the Army at war and in rapid transformation to build a branch that can deploy immediately in support of expeditionary operations around the world, a branch that is fully joint interoperable. As part of this process, our Active Component (AC) and Army National Guard (ARNG) FA units are transforming into modular forces to enhance their capabilities and make them more tailorable and deployable. The modular ARNG FA units will be organized and equipped like modular AC FA units.

The Field Artillery Azimuth 2005 to 2015 has five key tenets—Joint Interdependence and Interoperability, Expeditionary Units with Campaign Capabilities, Multifunctional Soldiers and Leaders, Fully Networked Battle Command, and Adaptive Full-Spectrum Systems and Capabilities.

Joint Interdependence and Interoperability. The Field Artillery will take several steps to ensure the branch is joint interoperable. We will integrate joint personnel fully into training and operations and fill joint billets in divisions and corps as well as in Fires Brigade fires and effects cells (FECs). An Air Force tactical air control party (TACP), organic to the air support operations squadron (ASOS), currently works closely with each corps, division, BCT and maneuver battalion. Also joint terminal attack controllers (JTACs) will be assigned down to the maneuver company level. We will continue to work with the USAF to man these joint billets and reciprocally to fill the ground liaison officer (GLO) billets in every Air Force squadron and wing that conducts air-to-ground missions.

We will establish a "university" for training members of all services on joint effects. Training opportunities will be linked within a common training base, much like separate colleges within a public university system.

For example, a Field Artillery company FSO or NCO ideally would receive training at a number of joint venues, such as the Joint Firepower Course at Nellis AFB, Nevada, and the Joint Air Tasking Order (ATO) Process Course at Hurlburt Field, Florida, as well as at the Army campus at Fort Sill, Oklahoma. At the Fort Sill campus, he would receive training on related topics, such as IO, CA, clearance of fires, etc. Similar examples could be applied to Air Force JTACs, Special Operations Soldiers or any other service member in an effects-based career field. This concept will

provide new perspectives with the end result being Soldiers, Sailors, Airmen and Marines who are qualified in joint effects operations.

Additionally, the joint fires and effects trainer system (JFETS) at Fort Sill is now operational and conducting training for all services. It enables collective training on a variety of tasks, such as call-for-fire (CFF) procedures, close air support (CAS), battlefield tracking and surveillance, and clearance of fires.

JFETS is linked to simulations to replicate audible sound and visual effects as well as environmental conditions. Using JFETS, joint fires observers (JFOs) already are being developed to work in conjunction with Air Force TACPs supporting every corps, division, BCT and maneuver battalion.

Expeditionary Units with Campaign Capabilities. This is the second tenet. Much of this tenet is being driven by the Army's transformation to the modular redesign. Direct support (DS) artillery battalions are becoming essential elements organic to their respective BCTs—brigades will no longer deploy without their artillery. New Field Artillery battalions are being activated, and the M119A2 production line is being reopened to accommodate the growth of the new Infantry BCTs (IBCTs).

As we gain experience with these new units, we are refining their structure and composition. Proposals have been approved through the Training and Doctrine Command (TRADOC) and submitted to Department of the Army (DA) to supplement Stryker BCT (SBCT) FA tactical operations centers (TOCs), platoon fire direction centers (FDCs), firing platoon headquarters, division joint FECs (JFECs) and FA battalion counterfire operation sections. There is also strong support across the force to upgrade the position of the ECOORD inside the division JFEC from a lieutenant colonel to a colonel—an essential change for us to most effectively coordinate lethal and nonlethal effects.

Additionally, division artilleries, FA brigades and corps artilleries are now transforming into Fires Brigades. The modular Fires Battalions inside these Fires Brigades will be smaller, but more capable. They will have a mix of rocket/missile and cannon weapons and access to a vast array of sensors and munitions. These units will be able to deploy and fight right off the ramp. (For more information on the FA's transition to the modular force, see the article "The Fires Brigade—Not Your Daddy's FFA HQ" by Lieutenant Colonel Samuel R. White, Jr., in this edition.)

Technological advances have placed technical fire control computations within the network or on the delivery system itself, meaning that, in the FCS force, FDCs across the artillery will be eliminated altogether.

The FCS force is being designed to make every Soldier a sensor with individual TA capabilities. These new capabilities will reduce the traditional fire support team significantly. They also will create new sources for TA and enhance sensor-to-shooter linkages, thereby supplementing our JFOs' contributions.

To create these smaller units, we will increase their survivability and situational awareness by enhancing their vehicle and crew protection, giving them the ability to auto-reload under armor and greater mobility and ensuring their vehicles have the same signature as their supported maneuver units' vehicles. Our systems will be more reliable and sustainable by performing on-board diagnostics and troubleshooting for the operators. A commonality between systems will allow parts to be interchanged, thus reducing the amount of time a system is down due to mechanical failure.

In addition, ARNG FA will have campaign-quality units—when the ARNG FA goes to war, it will be indistinguishable from its AC counterpart.

Multifunctional Leaders and Soldiers. We will create more competent leaders who will lead smaller, more capable units in battle. The Field Artillery leader will be the model Pentathlete—a leader who will be successful on today's multifaceted battlefield, a trained tactician capable of bringing a barrage of lethal and accurate firepower down on an enemy target and one who is well versed in fires and effects systems and doctrine across the range of military operations in the joint environment.

Multifunctional enlisted Soldiers will be consolidated into two career paths as we become an FCS-based force: Fires and Effects Coordination and Fires and Effects Delivery. The specialties that will feed into the Fires and Effects Coordination career path include fire direction, fire support, radar, survey and Met. As technology continues to improve, some of these military occupational specialties (MOS) will be merged, reducing the number of MOS within the Fires and Effects Coordination career field, as well as creating truly multifunctional Soldiers.

Cannon and multiple-launch rocket system (MLRS) crewmen will merge into a single delivery MOS, resulting in Soldiers who are trained on every system and interchangeable within any organization. This is possible because delivery system technology is evolving to the point where the crewmembers' focus can shift from technical to tactical operations. Common crew compartments and battle command systems will make the transition between weapons systems virtually transparent.

This fusion of today's many MOS into fewer MOS in the future makes us inherently more expeditionary.

Photo by SFC Jarry Malec, Fires Brigade Public Affairs Office, 4th Inf. Div.

Army's First Fires Brigade—A 2-20 FA Soldier, part of the Army's 4th Fires Brigade at Fort Hood, Texas, sits in the gunner's seat of an MLRS. In the future combat system- (FCS)-based force, cannon and MLRS crewmen will merge into a single delivery military occupational speciality (MOS), resulting in Soldiers who are trained on every system and interchangeable within any organization.

Fully Networked Battle Command. Networked battle command is a combination of emerging tactics, techniques and procedures (TTPs) coupled with a robust network that the force can employ to create a decisive warfighting advantage. The network will increase combat power by integrating sensors, decision makers and shooters to achieve shared awareness; increase the speed of command and the OPTEMPO; provide greater lethality; and increase survivability and self-synchronization. The linking of friendly forces within the battlespace will provide an improved shared awareness of the situation and enable rapid, effective decision making.

ECOORDs and Field Artillery units will have joint connectivity from "mud to space" through a single, satellite-based battle command system that will provide routine network linkages to Soldiers across the battlefield. The challenge will be managing the wealth of real-time information available and getting it to the appropriate levels.

To accomplish this, systems will be role-based with Windows-like applications. Point-and-click interfaces will be simplistic with wizards and help features available for set-up tasks. Operators will connect to the network through a myriad of options and filter information as needed.

Using precision targeting software to enhance hardware accuracies, sensors will connect through the network to platforms to achieve the lethal or nonlethal effects required. The network automatically will route the fires and effects requests to the appropriate system after conducting battlefield deconfliction.

Situational awareness will be enhanced, providing Soldiers and platforms a common operating picture (COP) at every echelon.

Adaptive Full-Spectrum Systems and Capabilities. This is the fifth and final tenet of the Field Artillery azimuth. It addresses the vast potential of tomorrow's technological capabilities.

This is absolutely an exciting time for the Field Artillery as many of these capabilities are being rapidly accelerated into today's force. We are taking advantage of current and emerging technologies to provide the maneuver commander the best support possible. In addition to our current capabilities, we can attack a variety of targets with various means using precision.

Our focus is on precision in both sensors and munitions. Sensors, such as the fire support sensor system (FS^3), can locate, mark and designate targets and, with future enhancements, will be able to do this on the move.

Our precision-guided munitions have greater lethality because of their precision and greatly minimize collateral damage. The guided MLRS (GMLRS) unitary rocket already has been used in Operation Iraqi Freedom (OIF) with stunning results. Testing of the Excalibur unitary round, a 155-mm fire-and-forget munition, is almost complete, and the round remains on track for fielding in theater later this FY.

In addition, the precision guidance kit (PGK) will provide a near-precision capability for projectiles already in our inventory with the aid of global positioning systems (GPS) and inertial navigation systems.

The precision non-line-of-sight launch system (NLOS-LS) will be a self-contained, tamper-resistant missile launcher that will extend the reach of artillery fires out to 40 kilometers and engage moving targets with or without an observer's laser designation.

Today in OIF and Operation Enduring Freedom (OEF), we are using a Special Operations Forces (SOF) version of the lightweight countermortar radar (LCMR), primarily to detect enemy mortar fires. It soon will be modified to better meet Army needs by providing 360-degree detection with a range of 10 kilometers in all directions and twice the accuracy of the current LCMR.

Additionally, the Knight with FS^3 is already in service with the 3rd Infantry Division in Iraq.

The small unmanned aerial vehicle (SUAV), the Raven, is fielding Army-wide, starting in late FY 06. Several are already in theater.

The developmental extended-range-multipurpose (ER-MP) UAV will have a range of 300 kilometers and near real-time battle damage assessment (BDA) and will remain in the air for 12 hours at a time. Each Fires Brigade will be allocated ER-MP UAVs in the modular division's combat aviation brigade (CAB) and have two ground control stations (GCS) that can control the missions of up to four UAVs simultaneously.

Beginning in FY10, embedded survey will augment the functions of today's improved position and azimuth determining system (IPADS). Survey will be embedded in all firing platform systems. Flying balloons to gather Met data soon will be a thing of the past as network-based satellite data become available on demand to any delivery system.

The multi-mission radar (MMR) will combine the capabilities of four radars into a single system. The MMR may replace the Q-36, Q-37, Sentinel and air traffic navigation, integration and coordination system (ATNAVICS) radars by FY13.

Finally the NLOS-Cannon, a member of the FCS family of vehicles, will replace the M109A6 Paladin howitzer, beginning in FY14. This system also will replace the 155-mm towed howitzers in the SBCTs' Fires Battalions.

It is *vital* that the Field Artillery remain ready, relevant, agile and versatile in the coming years. As the Army continues to transform to better support the joint force and prepares to field FCS, the Field Artillery must follow suit.

During the next 10 years, the Field Artillery will create modular organizations optimized to provide fires and effects in support of joint operations, including AC and ARNG units with like capabilities. Tomorrow's capabilities will be accelerated into today's force. Doctrine and TTPs will change to accommodate this new more capable force.

But most importantly, our azimuth envisions a branch of professional Field Artillery Soldiers and leaders who are instilled with the Warrior Ethos and optimally trained and developed to provide the joint force unique capabilities across the range of military operations. This is our charter for the future FA in the future Army and to remain the *King of Battle!*

Major General David C. Ralston became the Chief of Field Artillery and Commanding General of the Field Artillery Center and Fort Sill, Oklahoma, in August. Also at Fort Sill, he served as the Assistant Commandant of the Field Artillery School and Chief of Staff of the Field Artillery Center. His assignment prior to becoming Chief of Field Artillery was as the Director of Force Management on the Army Staff, G3, at the Pentagon. He also served as the Assistant Chief of Staff for Operations in the Kosovo Force. He commanded two batteries; the 3rd Battalion, 1st Field Artillery (3-1 FA) in the 1st Armored Division in Germany; and the 1st Cavalry Division Artillery at Fort Hood, Texas. In addition, in Germany, he served as a Brigade Fire Support Officer in the 1st Armored Division and, at Fort Hood, as the S3 for the 2nd Armored Division Artillery and Executive Officer for the 1st Cavalry Division Artillery. He holds an MA from Central Michigan University and was an Army Senior Service Fellow at Harvard University.

High Praise for 82nd Div Arty's Support of Hurricanes Katrina and Rita Relief

This is a reprint of an email praising the outstanding performance of the 82nd Airborne Division Artillery (Div Arty) in support of Hurricanes Katrina and Rita relief. It was sent in September to former commanders of the 82nd Airborne Division by the current commander, Major General William B. Caldwell IV. We reprint this email with his permission.

Editor

As the inevitable beat of the modular transformation drum continues, I want to share with you the phenomenal performance of our Division Artillery under Colonel [COL] Vic [Victor] Petrenko and Command Sergeant Major [CSM] Roger Howard as it conducted one last Div Arty operational mission to a standard befitting its reputation as the best Div Arty in the history of our Army.

As you know, the 319th AFAR [Airborne Field Artillery Regiment] is the most decorated artillery regiment in our Army. It is an organization that traces its roots from the muddy trenches and horse-drawn artillery pieces of World War I to the storied actions of Normandy, Salerno and Holland through the firebases of Vietnam across the "line in the sand" to the mountains of Afghanistan and the most dangerous streets of Baghdad. The 319th Redlegs are the most proficient artillerymen in the history of our Army, and they continue to coordinate the most devastating lethal joint fires our enemies have ever experienced.

Since the Global War on Terrorism began, we have asked these professionals to conduct every conceivable nonstandard mission simultaneously with their primary task of delivering lethal fires. We have asked them to man 120-mm mortars, conduct MSR [main supply route] security along the most dangerous routes in Baghdad and command and control maneuver units in Afghanistan. It is fitting that their last operational mission was, perhaps, their most rewarding: *All Americans* helping Americans.

The following is a short synopsis of their actions in Louisiana in support of Katrina and Rita relief efforts.

New Orleans Louis Armstrong International Airport (NOIA) Command and Control, Evacuation and Security. The Div Arty TAC [tactical command post] and 1-319 AFAR (minus) were the first elements from the 82nd on the ground on the evening of 3 September, about seven hours after they were notified by watching President Bush make the announcement that he was sending the 82nd to New Orleans on CNN. COL Petrenko, CSM Howard and their Paratroopers immediately assessed the environment at the airport and went into action.

Lieutenant Colonel [LTC Barry S.] Di Ruzza and CSM [Samuel B.] Campbell [command team of 1-319 AFAR] organized the absolute chaos of thousands of desperate evacuees who were strewn throughout the filth-ridden terminals of the airport. These leaders added efficiency and direction to the evacuation of 8,836 people within their first 12 hours of being on the ground.

It is hard to put into words the immediate effect that these Div Arty Paratroopers had as they calmly and confidently filtered into the airport. Their maroon berets caused an instantaneous and infectious aura of hope that reverberated throughout the chaotic scene.

The Div Arty TAC, recognizing a deficiency in the management of the evacuation effort, brought more than 25 different agencies together in an organized fashion. During the next two days, the Joint Interagency Operations Cell (JIOC) established by the Div Arty formed the "center of gravity" at NOIA for all aspects of the evacuation effort and much of the relief activity in the area.

As the Director of Flight Operations at NOIA told me, without the leadership provided by the Div Arty TAC, it would have taken at least two additional weeks before he could have opened his doors to commercial traffic again.

When all was said and done, our Div Arty helped facilitate the evacuation of more than 25,500 citizens of the New Orleans area and 200 pets from NOIA.

Security and Nonstandard Missions. While the Div Arty TAC and 1-319 AFAR were handling the airport missions, the Div Arty continued to flow the remainder of its HHB [headquarters and headquarters battery] and 2-319 AFAR into NOIA by ground convoy (a total of 150 pieces of rolling stock) from Fort Bragg, North Carolina, and MILAIR [military air].

Upon arrival, the *Falcon's Fury Battalion* [2-319 AFAR], led by LTC Al Shoffner [Wilson A.] and CSM Jimmy

Soldiers from C/1-319 AFAR escort Hurricane Katrina evacuees through NOIA.

Tomlinson, secured and repaired the perimeter of NOIA and took responsibility for search and rescue in the New Orleans suburbs of Bonnabel and Metairie.

Simultaneous with this mission, the battalion headquarters integrated into the FEMA [Federal Emergency Management Agency] Urban Search and Rescue Operations Cell and provided security, leadership and organization for 55 urban search and rescue missions that operated by boat and LMTVs [light medium tactical vehicles] in the flooded areas of New Orleans. As the airport evacuation neared completion, 1-319 AFAR added to the rescue effort by also providing a battery. These teams were responsible for entering the most devastated and dangerous areas of the city, saving countless lives and evacuating citizens in the final days of the rescue effort.

Upon entering one house in a flooded area, these superb artillerymen found an elderly woman in a wheelchair up to her waist in toxic water where she had been alone for four days with limited food and drinking water. While they lifted her wheelchair out of the mucky water to place her into a small boat, she remained completely silent as she strained to kiss each of the Paratroopers on the cheek.

This integration into the FEMA Search and Rescue Cell was so critical that LTC Shoffner and his staff were asked to develop the long-range urban search and rescue plan for FEMA and New Orleans, which is currently being executed as designed—a true testament to the battalion's adaptability and professionalism.

Remains Recovery Teams (RRTs). Due to the phenomenal professionalism and genuine respect that the *Fury Battalion* displayed to fellow American citizens, the Division CSM [Wolf W. Amacker] personally selected *Fury* to assist the FEMA sanctioned RRTs as they fanned out across the devastated city of New Orleans to conduct the most solemn of all missions: collecting the remains of fellow Americans.

The civilians executing this necessary, demanding and sensitive mission were in awe of the remarkable compassion and respect that our Paratroopers displayed, day in and day out, for more than two weeks. Not a single day went by that they did not express their overwhelming gratitude to me and CSM Amacker for the actions of these compassionate and respectful Redlegs.

Assumption of the Algiers District. As the evacuation center at NOIA closed and terminals became open to public air traffic, we sent the Div Arty to assume control of the Algiers District, an area devastated by the winds and rain of Katrina. The *Falcon's Fury Battalion*, with a battery from 1-319 AFAR, took over the area from the 2nd BCT [Brigade Combat Team] from the 1st Cav [1st Cavalry Division]. The battalion quickly assessed the infrastructure and services of the area and integrated with the local leadership and public service organizations to make an immediate and continuing positive impact within the community.

At a local mission church led by Pastor James N. Brown, a hero who rode out the storm in his house across from his church, the battalion provided its cooks and other Paratroopers to help distribute food and prepare meals that served more than 8,000 citizens of the community. Large posters of the 82nd Airborne Division Patch are now proudly displayed in every window of the church.

The Div Arty's physician's assistant was instrumental in setting up medical support sites by gathering and synchronizing assistance and assets from various medical resources throughout the community. These medical sites were responsible for conducting 380-plus immunizations and filling 700 prescriptions for drugs to the neediest citizens of the community.

The *Fury Battalion* aggressively evaluated local infrastructure and worked with the local councilwoman, New Orleans Police and other agencies to prepare for the return of the population, including producing and distributing more than 15,000 handbills to the returning citizens. The efforts of the Div Arty were so successful that the Algiers District was among the first areas to reopen its doors to local businesses and was the first to welcome the return of citizens on 19 September.

Hurricane Rita Relief Operations in the Calcasieu and Vermilion Parishes. As Hurricane Rita bore down on the southwestern Louisiana coast, I deployed COL Petrenko and his staff to serve as the division lead command and control element to the Vermilion Parish, an area covering more than 900 square miles of flooded plains and damaged or destroyed towns.

After driving through hurricane-force winds and rain, the Div Arty TAC integrated into the Lake Charles Emergency Operations Center (EOC) and coordinated directly with Lieutenant General [Russell L.] Honore and his staff to provide the first assessments of the destruction in the Lake Charles region.

By mid-afternoon on this same day, 2-319 AFAR found itself in the Lafayette area, leading joint reconnaissance missions with an anti-terrorist battalion from the USMC now OPCON to [under the operational control of] our division and conducting joint search and rescue boat missions in the vast flooded areas

Photo by CPL Sam Kilpatrick, 55th Signal Company (Combat Camera)

Soldiers from 2-319 AFAR gather water and meals ready-to-eat (MREs) for residents in a New Orleans neighborhood during Task Force Katrina.

of the Vermilion Parish. The battalion also had our LRSD [long-range surveillance detachment] from 313th MI [Military Intelligence] and engineers from the 307th Engineers as part of its task force.

The Div Arty also integrated into the EOC in Abbeville, Louisiana, to assist in the command and control of the numerous relief organizations pouring into the devastated area.

The Div Arty and the 2-319 AFAR battalion staffs coordinated and conducted countless over-flights of the destroyed parish with local, state and federal officials to assess all key facilities and infrastructure.

In addition to these missions, the Paratroopers from the 1st and 2nd Battalions of the 319 AFAR continued to display their respect and honor for their fellow American citizens by helping more than 195 elderly Americans move back from Baton Rouge to their assisted-living homes in Lafayette.

As a testament to the success of their efforts, the local high school in Vermilion Parish officially adopted 2-319 and honored the Paratroopers by having 350 T-shirts made on their behalf and treating them to home-cooked meals of jambalaya and gumbo daily.

Hurricane Rita Relief Operations in Cameron Parish. Simultaneous with their operations in the Vermilion Parish, I launched 2-319 via UH-60s, with two hours' notice on 26 September to the most southwestern Louisiana parish of Cameron. With 950 square miles flooded, the parish was hit the hardest by Hurricane Rita in Louisiana.

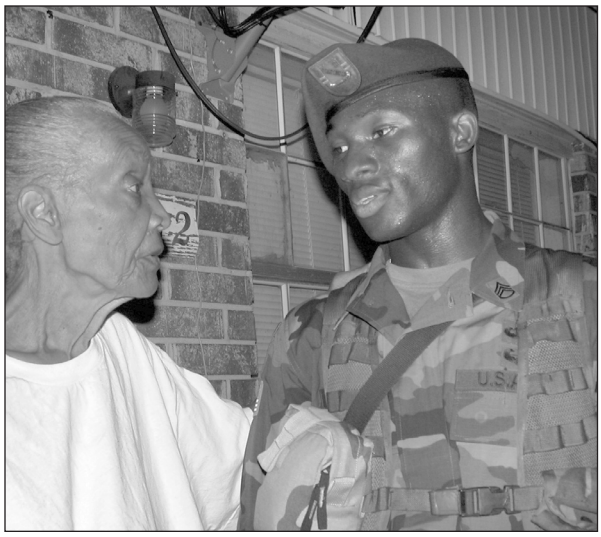


Photo by Gerry J. Gilmore

New Orleans resident Alexcener Reaux, 74, thanks SSG Samuel H. Zoker for his help outside her home in Algiers, Louisiana, 17 September. Zoker is with A/2-319 AFAR.

The Paratroopers immediately began clearing debris from primary roads, coordinating over-flights for key civilian leaders and assisting USDA [US Department of Agriculture] representatives and local farmers in delivering water and hay to more than 3,000 head of cattle stranded in what was once fields and marshland.

At the completion of this mission, 2-319 AFAR had delivered more than 20 tons of hay, 25 water troughs and 10,000 gallons of fresh water to the area's cattle, the primary source of livelihood for the hardworking citizens of Cameron Parish.

Additionally, while two of the Div Arty's Paratroopers were on a routine reconnaissance mission, they happened upon a team of marine biologists who had been staying with a stranded dolphin for more than 48 hours. The Paratroopers helped this team by coordinating for a Coast Guard helicopter. They then waded chest deep into the flooded area where the dolphin was stranded, helped lift it into the helicopter and escorted it to the Gulf of Mexico where it was released to swim to freedom.

Effects-Based Operations (EBO). During all these relief efforts, the division FSE [fire support element] was the "center of gravity" of my division staff. No other element was so ideally suited for collating and sifting though the large amounts of information gathered by our subordinate elements and the DTAC [division tactical command post].

The FSE presented the information in a fashion that facilitated senior-level decision making and developing and communicating a vision for future operations. Daily, I took the key nuggets of information presented by the FSE to brief and inform the key civilian, military and political authorities. The senior leaders in FEMA, the JTF [Joint Task Force], and the New Orleans and Louisiana Governments relied heavily on the information provided by Major [Daryl L.] Fullerton and Master Sergeant [Philip P.] Serrano [division FSE] to make the best possible decisions for the people of New Orleans.

As all of you can see, it was a terrific performance by Vic and his crew! Not surprisingly, the Div Arty continues to perform above and beyond expectations at all levels.

I could not have picked a better team to transform into the Army's newest Airborne Brigade Combat Team next year, the modular 82nd Airborne Division's 4th BCT. *All the Way!*

Bill [MG William B. Caldwell IV]

Battlefield Coordination Detachment Activated

On 16 October 2005, the 4th Battlefield Coordination Detachment (BCD) was activated at Shaw AFB, South Carolina. The commander is Colonel Glenn Harp; his Sergeant Major is Michael Pinkney. A BCD is the senior Army liaison element in the theater air-ground operations system representing the ground or land component commander to the air component commander, normally the Air Force. The 4th BCD will support Central Command (CENTCOM) in coordination with the Ninth Air Force.

The 4th BCD joins four other BCDs throughout the world. The 1st BCD at Fort Bragg, North Carolina, is a contingency BCD and supports CENTCOM, Northern Command (NORTHCOM) and Southern Command (SOUTHCOM). It is forward deployed in the CENTCOM area of operations. The 3rd BCD supports ground component forces in Korea and coordinates with the Seventh Air Force at Osan Air Base. The 19th BCD is at Ramstein AFB, Germany, and supports US Army Europe (USAEUR), coordinating with the 32nd Air Operations Group. The 2nd BCD is an Army Reserve unit at Hurlburt Field, Florida, that supports US Army and US Air Force Pacific at Hickam AFB, Hawaii.

The 4th BCD at Shaw AFB is expected to be fully operational by the beginning of FY07.

COL Jeffrey W. Yaeger, Director
Joint and Combined Integration Directorate (JACI), Fort Sill, OK

Dispatch from Iraq: The Constitutional Referendum

This is an email to friends and family from Sergeant "B," a Special Forces Medic in 3rd Battalion, 5th Special Forces Group, who is in Iraq. It describes his experiences in Kirkuk on 15 October, the day of the Iraqi constitutional referendum. His captain, a former Field Artilleryman, passed his email to us. This email is reprinted with Sergeant B's permission.

Editor

I'll be the first to admit that after weeks of reading nothing but intelligence reports on insurgents who had vowed to turn the Iraqi constitutional referendum into a bloodbath, we rolled out the gate this morning expecting World War III.

We don't usually "patrol." When we drive out in our gun-trucks, it's usually with a specific and limited objective in mind and almost always at night. We usually leave patrols to the Infantry. But today, we'd offered to pitch in and help expand the "presence" on the streets to deter would-be troublemakers.

The whole team was pretty wound up, expecting to be blown up at any minute. Mouths were dry and knuckles were white around weapons grips.

And then a funny thing happened. The moment we came near the first polling station, our combat patrol turned into a parade.

The city had been completely closed off to non-official vehicle traffic for the past few days, and most businesses were closed for today, at least. The weather was beautiful: clear and relatively cool. The streets were filled with families in their finest clothes and children playing soccer.

Some people walked the streets caped in Iraqi or Kurdish flags while children waved miniature versions of the flags. Some children waved printed copies of the constitution that were as big as their young bodies, copies they almost certainly couldn't read yet. The moment the children caught sight of us, pandemonium broke loose as they chased after us yelling, "Hey, Mister!" and "America good!"

While the adults were less demonstrative than the children, every few feet a man or woman fresh from voting would hold up an ink-stained index finger and then transition the gesture to a "thumbs up" with a smile and obvious pride.

This pattern repeated itself throughout the city this morning. We drove through the streets feeling like visiting royalty—even in some neighborhoods where friendliness toward Americans is far from customary.

Another positive sign: everywhere today we saw Iraqi police and soldiers walking barefaced among the people. Usually, they fear the insurgency so much that most wear ski masks to protect their identities. Today, they walked openly among the people and generally basked in the well wishes and pride of the public at large.

We stopped to let our Iraqi interpreters cast their ballots, but we could not get closer than a block from the actual polling site due to the immense crowds of happy voters. Sergeant "S," the team sergeant, and I hopped down from the gun-truck to escort the "Terps" [Soldiers' slang for interpreters] to the school with its makeshift voting booths. We walked through the crowds followed by no less than 50 children who took turns mustering the courage to run up and shake our hands or flash us thumbs up.

At the polling site, a portly election official patted down male voters for weapons. Apologetically, he informed us that we could not bring our rifles, pistols, grenades and other assorted explosives inside the polling station.

"Iraqi law," he said. We found this both amusing and immensely heartening. We told him that we would wait outside while our Terps voted.

"But you're not going to vote?" he asked disappointedly.

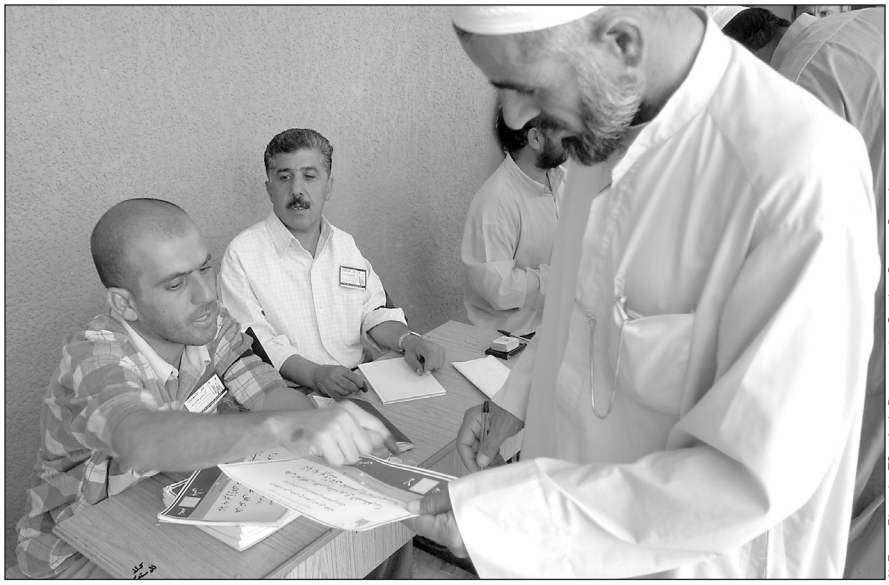
"No," we replied, "that's just for Iraqis." The official, who obviously had a looser grasp on eligibility requirements than weapons policy, responded, "But we are brothers!"

Obviously, there are many parts of this country where public sentiment is very different. Even here, many days we despair that our work and sacrifices mean anything. And, of course, the people in our intelligence reports are out there, even if they often fail to bring about the carnage and destruction that are their aim.

But on this "Distinguished Day," as one of our Terps called it, my team saw a whole lot of people who seemed genuinely proud to be Iraqis and excited to have a chance to be heard.

I can think of a few people who were pretty proud to be Americans too.

Sergeant B, SF Medic
3/5 SFG, Iraq



Air Force Photo by TSgt Andy Dunaway, 1st Combat Camera Squadron

Local citizens participate in the referendum voting in Samarra, Iraq, 15 October 2005.

ADA and FA

Finding Common Ground

By Colonels Gregory C. Kraak, FA, and Harry L. Cohen, ADA

In June 2004, the Chairman of the Joint Chiefs of Staff received an urgent memorandum from the Central Command (CENTCOM) commander requesting an immediate capability to counter the growing threat to US forces from insurgent rockets and mortars. Along with improvised explosive devices (IEDs), these simple but effective weapons were the number one killers of US service members deployed to Iraq. Unfortunately, although this particular threat had been a concern for years, there was no capability in the inventory to combat it.

The Army immediately turned to the Air Defense Artillery (ADA) at Fort Bliss, Texas, and the Field Artillery (FA) at Fort Sill, Oklahoma, for answers, and the two centers formed a combined Tiger Team to explore possible technical solutions. During weeks of intense experimentation and analysis, the "heavy hitters" of the defense industry offered several prototype systems for consideration with the three top candidates invited to a "shoot-off" at Yuma Proving Ground, Arizona. When the smoke cleared, a system combining the FA's lightweight countermortar radar (LCMR) and Q-36 Firefinder radar, the ADA's Sentinel radar and forward area air defense command and control (FAADC^2) system, and the US Navy's Phalanx gun came out on top. This system of systems demonstrated the capability to detect and intercept incoming rocket and mortar rounds. (See the concept diagram at Figure 1.) An immediate production and fielding schedule was implemented, and the first two counterrocket artillery and mortar (C-RAM) systems deployed to Iraq in August 2005.

As guns were produced, the Tiger Team developed the basic doctrine on how to fight using this new capability. The objective was to create an organizational structure using existing systems with little or no additional hardware or personnel requirements.

The team also developed tactics, techniques and procedures (TTPs) to allow operators to leverage system subcomponents and other relevant capabilities located at the defended asset to accomplish the tasks of shape, sense, warn, intercept, respond, protect and integrate C^2.

These efforts produced a capability in theater that already has proven its value by saving Soldiers' lives and taking the fight to those who seek to use rockets and mortars against our forces. But is this the end of the story or just the beginning? As valuable as it might be, is C-RAM just a response to an immediate

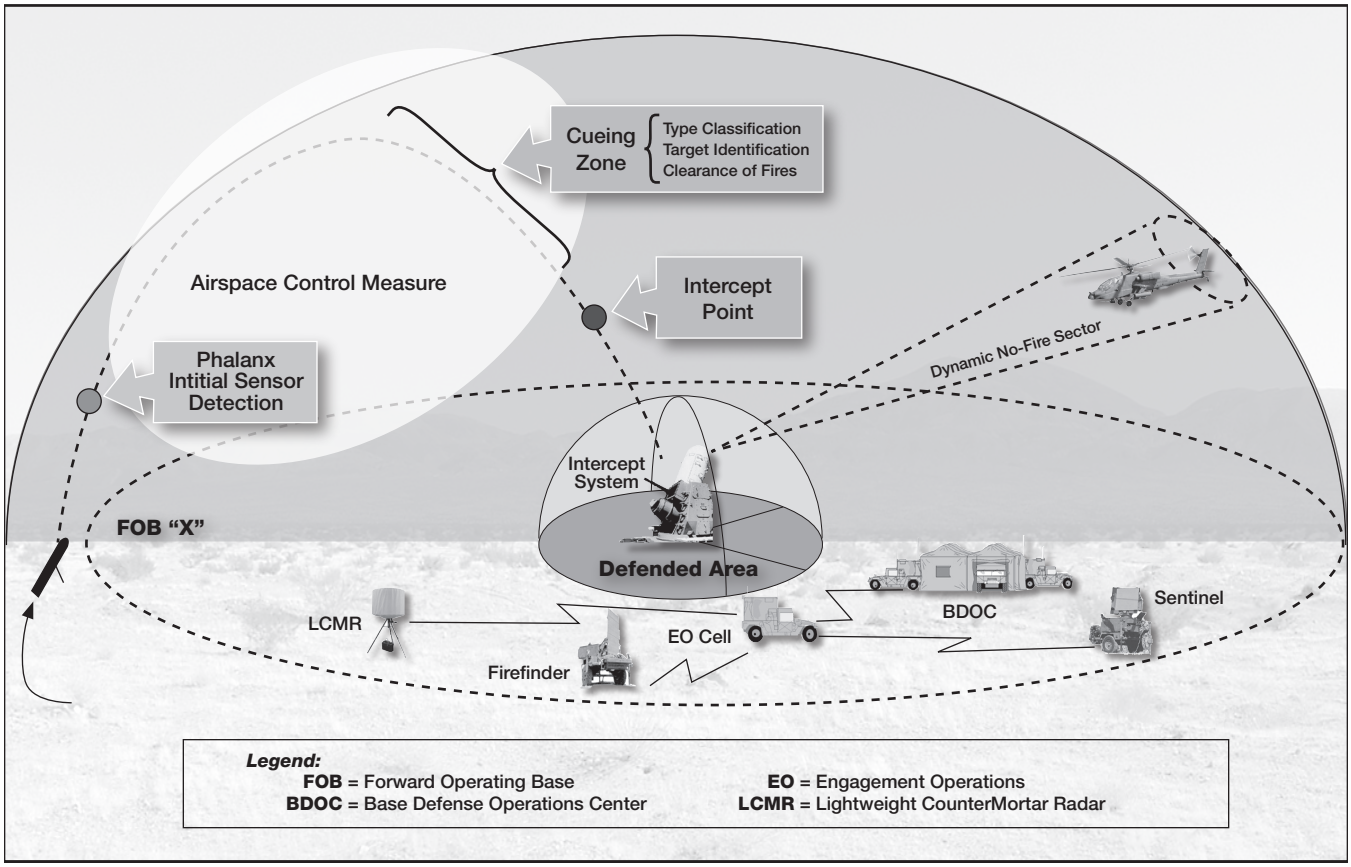


Figure 1: Concept to Intercept Incoming Rockets and Mortars—Called Counterrocket Artillery and Mortars (C-RAM)

operational need or does it portend a fundamental shift in the relationship between the two branches that joined to create it?

This article's intent is to explore commonalities and potential areas of synergies of the ADA and FA working within the emerging concept of joint networked effects (JNE) that is enhancing the modular force's ability to operate at will on future battlefields. It looks at other opportunities as well, beyond C-RAM, for the two branches to explore. This is a look into the future, unfettered by the branches' existing structures.

Position	Grade	Branch/MOS
Operations Officer	O5 & O4	Field Artillery
Aviation Officer	O4	Aviation
Operations Officer	O4	Special Forces
Fire Support Sergeant	E7 & E6	13F40/30
Battery Display Operator	E5	13P20

Figure 2: The attack operations cell in the deputy area air defense command (DAADC) of the Army air and missile defense command (AAMDC), a threater-level organization, has a Field Artillery, Special Forces and Aviation presence.

Potential Areas of Synergy. The branches were combined until 20 June 1968 when the Army established the ADA as a basic branch. The branches' paths diverged somewhat during the past three-plus decades with air and missile defense (AMD) focusing on protection and FA focusing on supporting fires. Despite these apparent dissimilarities, the branches now find that they have much in common with the potential for even greater commonality in the near future.

As the branches continue to explore and identify commonalities, one clear example of synergy already exists in the Fires Brigade fires and effects cell (FEC). The modular Fires Brigade is the primary executor of joint fires for the division- or corps-level ground force commander in those areas not assigned to his subordinate maneuver forces. The brigade provides counterfire, shaping fires and reinforcing fires, the latter as requested. (It replaces the division artilleries, FA brigades and the corps artilleries in the current force structure.)

The Fires Brigade FEC embeds the capabilities of lethal and nonlethal fires, airspace management and the Air Force tactical air control party (TACP) into a single cell. (See Figure 3 on Page 17 of this edition for the Fires Brigade FEC organizational structure.) Having these capabilities in a common structure facilitates and enhances staff coordination and cooperation and provides the impetus to achieve full unity of effort.

Other organizations are not as fully integrated, however. Although the air defense and airspace management (ADAM) cell and brigade aviation element (BAE) have merged into a single cell, the activities of this union are not necessarily synchronized with the activities of the FEC and TACP. While the FEC may not be the proper location to conduct this staff synchronization, the fact that these functions may not be collocated presents a potential challenge for maneuver commanders at all levels.

Above the corps level, the Army component commander provides battlefield coordination detachments (BCDs) to air operations centers (AOCs) to plan, coordinate and deconflict air operations. The AMD organization at the theater level is the Army air and missile defense command (AAMDC). The AAMDC is the Army's operational leader for Army theater air and missile defense and works closely with the BCD to nominate targets.

The AAMDC has a deputy area air defense command (DAADC) staff element in the AOC to support land-based active air defense force operations. It also has an attack operations cell that includes an FA, Special Forces and Aviation presence. (See Figure 2.)

But to truly capitalize on potential synergies between FA and AMD, why not align the functions of the AAMDC, BCD and AOC in each combatant command to promote cohesion and familiarity and provide greater access to the full spectrum of joint capabilities? The Army's three AAMDC units should be aligned habitually with the five BCDs and five Falconer AOCs as shown in Figure 3. This facilitates joint planning and interoperability and gives combatant commanders a more cohesive structure to achieve these complex tasks.

Institutional Training. The two branches also have much in common institutionally. The FA Center continues to refine the joint fires and effects trainer system (JFETS), a virtual training system that replicates effects while simulating realistic conditions. JFETS is now operational at Fort Sill and enables individual and collective training on many tasks, including call-for-fire (CFF) procedures, close air support (CAS), clearance of fires, and battlefield tracking and surveillance.

It is easy to picture incorporating AMD training into JFETS as well, training tasks such as management of airspace and unmanned aerial vehicles (UAVs), coordination of helicopter flight routes and air corridors, identification of friend or foe (IFF) and similar tasks.

The two branches already share common radar repair training. The 94M Radar Repairer is trained to perform electronic maintenance on all Military Intelligence (MI), FA and ADA radars and sensor systems. The 832nd Ordnance Battalion's training detachment, a tenant activity at Fort Sill, trains these Soldiers. The training provides the skills and knowledge to perform maintenance on radar systems, such as the AN/TPQ-36 and AN/TPQ-37 Firefinders, AN/MPQ-64 Sentinel, AN/PPS-5D ground sur-

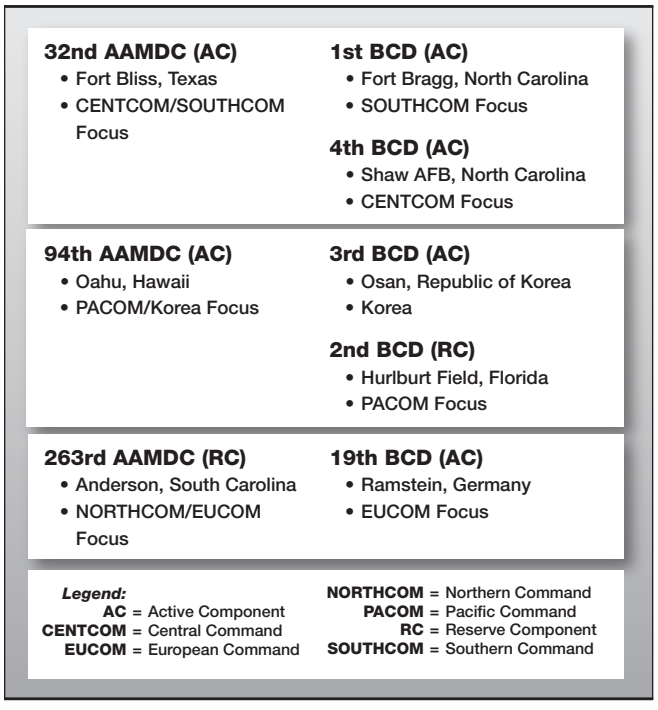


Figure 3: Alignment of AAMDCs, Battle Field Coordination Detachments (BCDs) and the Falconer Air Operations Centers (AOCs).

veillance radar and the MI's remotely monitored battlefield sensor system II (REMBASS II). Upon graduation, these 94M Soldiers have qualified for assignment to any type of unit that owns these systems.

As the Army's LCMR system is fielded in late FY08, training on it should be incorporated into the existing 94M program of instruction (POI). A similar case can be made for the multi-mission radar (MMR) when it's fielded in FY13. This new radar will combine the capabilities of the Q-36, Q-37, Sentinel and Aviation's air traffic navigation, integration and coordination system (ATNAVICS) radars.

The only radar system training for either branch that is not conducted at Fort Sill is for Patriot Radar Repairers, 94S. This is done at Fort Bliss because Fort Sill has no Patriot systems. One of the Base Realignment and Closures (BRAC) Commission's recommendations may provide a remedy to this, however, as the 6th Air Defense Brigade relocates to Fort Sill, projected for the 2007-2008 timeframe. This move will include about 15 Patriot launchers and 10 Patriot engagement control stations (ECS) and radar sets, providing the opportunity to train 94M and 94S Soldiers at a single location, although using separate POIs.

Consolidating all radar repairmen training at Fort Sill would nest into the Army's transition to a two-level maintenance program. The transition will simplify procedures and result in more commonalities through implementation. The two-level maintenance concept envisions converting from the current multiple-echelon system to just two levels, field and sustainment. (See the article "Two-Level Maintenance: Modularity and the Transformation of Army Maintenance" by Captain Alyssa Y. Astphan, Ordnance Corps, in the September-October edition.) The radar sections of both branches are already implementing this concept as embedded 94Ms provide all field maintenance on these radar systems. Having a single institutional training base for all radar repairmen, including Patriot radars, fits into the two-level maintenance concept very well.

We also share many doctrinal similarities. Today's joint doctrine includes separate publications for countering air and missile threats: *Joint Publication (JP) 3-01 Joint Doctrine for Countering Missile Threats* and *JP 3-09 Doctrine for Joint Fire Support*. In the near future, we should combine documents to increase efficiencies where possible. For instance, these two publications could be combined into a single *Joint Publication for Fires, Effects and Protection*. Army doctrine should be similarly merged to highlight branch commonalities.

The Future: A Protect and Strike (ProStrike) System of Systems. We have just described the synergistic effects that could be realized by task organizing existing or near-term fires and protection capabilities employed through *ad hoc* C^2 arrangements at various echelons in the modular force.

Army Aviation's Air Traffic Navigation, Integration and Coordination System (ATNAVICS). The multi-mission radar (MMR) will combine the capabilities of the Q-36, Q-37, Sentinel and ATNAVICS radars when the MMR is fielded in FY13.

But what if we take this concept one step further? What if we look toward a future in which we formalize these synergies through developing capabilities that allow the complete integration of AMD, FA and joint fires, so we can, as Lieutenant General (Retired) Jay Garner stated, "Kill everything in the air that is shot at us, and also kill the source from which it originated"? (The source of this quote is the JNE Independent Assessment Panel, 25 August 2005.)

What key enablers must be put in place across the doctrine, organization, training, materiel, leadership and education, personnel and facilities (DOTMLPF) domains to help achieve ProStrike?

Creating a fully integrated ProStrike system of systems requires the full commitment of the FA and AMD communities, subordinating single branch interests to achieve this greater combined capability. That commitment must include a willingness to rethink existing doctrine; further transform standing organizations and force structure; develop and execute combined training strategies; synchronize materiel development efforts; and inculcate leaders' acceptance of the combined ProStrike. This may sound daunting, but we've already taken the most important first step—the "enabler of enablers."

In late August 2005, the Defense BRAC Commission recommended sweeping changes to Department of Defense (DoD) installations and organizations. The commission approved most of DoD's original proposals, including the plan to relocate the ADA Center to Fort Sill and merge it with the FA Center to establish the Army Center of Excellence (CoE) for Joint NetFires. The President concurred in September and with Congressional approval in November, the path is clear to begin.

As the leaders of the respective centers develop their combined vision for this new CoE, both have agreed to use the opportunity to further explore the potential synergies that exist between the branches. Traditional center functions in the combat, training, doctrine and leadership development areas will experience some yet-to-be-determined degree of integration. Some subordinate organizations, such as the battle labs, will integrate completely, combining resources to support analysis, experimentation and testing in both branches. As integration deepens across the DOTMLPF domains at the CoE, there will be a corresponding increase and acceleration of the explora-

tion and formulation of more advanced JNE concepts that, in turn, will drive the creation of other key enablers needed to realize the awesome capability described by General Garner.

These other key enablers must allow us to implement the concept of "Seeing First, Understanding First and Acting First" in an integrated fashion to deliver decisive effects on air and missile threats and their originators. While each branch has been pursuing a system of systems capability independently, we must transcend those efforts to achieve a JNE system of systems.

Seeing First requires expanding and better leveraging the current capabilities of our combined family of sensors while continuing to pull the relevant data from national and joint assets. It also steers us toward continued MMR development and fielding to enhance operational flexibility and create efficiencies for both branches.

Perhaps the most critical aspect of Seeing First is creating an effective and responsive sensor fusion and data distribution system, allowing ProStrike assets to perform sense, warn, intercept and counterstrike functions simultaneously.

Understanding First requires integrated processing of the information received, allowing the creation of a single, correlated, three-dimensional operational picture. To achieve this, we need to leverage existing global positioning system (GPS) capabilities to further develop a joint common grid (JCG).

With this operational picture, target designation becomes a collaborative, distributed function that is the culmination of force operations. These operations include short-range ballistic missile (SRBM) transporter erector launchers (TELs) templating and engagement operations, feeding the state vector and covariance data to algorithms that accurately back-plot inbound theater ballistic missiles (TBMs) or their launch sources. This is achieved through further enhancing operational software developed for the AMD's common battle command capability (CBCC).

In fact, to further optimize battle command, a merger of functions being developed for the AMD CBCC with those functions resident in the FEC could lead to developing a JNE (or similarly titled cell), enhancing the commander's ability to task organize fires and protect capabilities at all echelons.

Acting First is achieved through the creation of a joint integrated strike net (JISN) with the AMD integrated fire control system (IFCS) and the advanced FA tactical data system (AFATDS) working in tandem. JISN would allow the entire suite of joint protect and strike "shooters" to use the fire control quality data available from a sensor fusion device to deliver the desired effects on designated targets.

A battery of high-mobility artillery rocket systems (HIMARS) and a battery of the future surface-launched advanced medium-range air-to-air missiles (SLAMRAAMs) (shown here) could be task organized together as part of a Protect and Strike task force (ProStrike TF).

With these enablers in place and a corresponding combined effort to rethink how we currently fight (e.g., kill chains, command and support relationships, organizational structures, etc.), it is easy to imagine a future theater of operations in which a JNE located at the joint force land component command (JFLCC) headquarters is charged with wartime oversight of an AAMDC and BCD. For example this JNE organization might be tasked to put together a force package to protect a newly created division aviation assembly area against SRBMs and cruise missiles while exploiting available platforms to destroy the source of those threats.

In this scenario, a quick mission analysis shows that the AMD brigade and Fires Brigade supporting that division have assets available to handle this mission. The two brigades are given a warning order (WARNO) to task organize one AMD composite battalion (with its JNE tactical operations center, or TOC) and create a ProStrike task force (TF) of two Patriot advanced capability (PAC-3) batteries, a surface-launched advanced medium-range air-to-air missile (SLAMRAAM) battery and a high-mobility artillery rocket system (HIMARS) battery. In conjunction with the ADAM/BAE cell, the corps FEC receives the WARNO at the same time and begins coordinating and planning. For example, the FEC would need to plan Army airspace command and control (A^2C^2) and initial defense design and coordinate with the JNE cell and AAMDC/BCD in the AOC.

Once in position with a common network-ready capability, the firing units initialize their systems and receive critical information from ProStrike TF planners concerning relevant force operations data and the finalized optimal defense design. Within hours, the TF and neighboring units can receive early warning of a short-range TBM launch with a predicted impact point in the vicinity of the corps aviation assembly area.

Seconds later, one of the Patriot batteries picks up the track on its screens and immediately processes and executes an engagement. Almost simultaneously, after verifying the enemy launch position and clearing fires through the corps JNE cell, the JNE TF TOC sends a counterstrike command to the HIMARS battery.

As missiles and rockets leave the launchers at both the HIMARS and Patriot batteries, the TF sees an inbound, air-launched cruise missile through data passed by the joint land attack cruise missile defense

elevated netted sensor system (JLENS) to the sensor fusion net. The TF TOC again springs into action with the AMD fire control officer sending engagement commands down to the SLAAMRAM battery while the counterstrike officer cues the JNE officer at the AOC with track data on the cruise missile launch platform, acting on positive identification provided by the air surveillance officer. Offensive counterair (OCA) assets in the vicinity are cued through the JISN and, within minutes, intercept all inbound missiles threatening the assembly area and destroy the systems from which they were launched.

Conclusion. So, do we suggest an immediate return to 1968 and a "one-artillery branch" future? While some may make that cognitive leap based on this article, the intent is to highlight some of the common ground the branches already occupy and identify other potential synergies worth further exploration.

We hope this article generates discussion and questions among members of both branches as to the second and third order of effects in trying to leverage those synergies. For example, C-RAM, as described earlier, nests neatly into stability and support operations (SASO), but how does it fit into offensive major contingency operations?

The ProStrike TF concept seems viable under certain conditions, but the two branches typically operate at different levels of war: FA is focused largely at the tactical/operational level (with the exception of the Army tactical missile system, or ATACMS), and AMDs are focused more at the operational/strategic level. Is it really feasible or even desirable to force the design of common organizations or share operators that may create more problems than solutions?

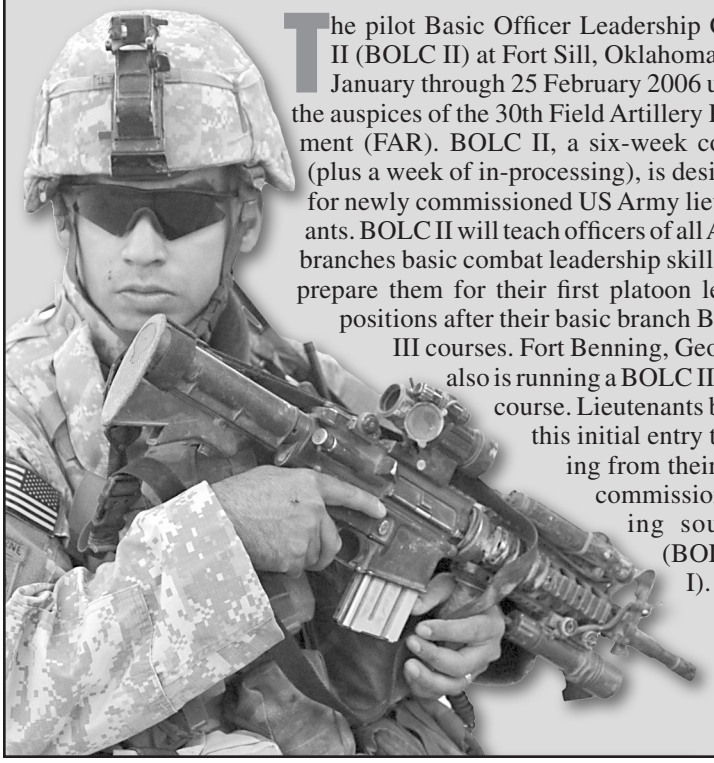
We believe both branches gain much by exploring these concepts. Although many challenges lie ahead, the opportunities are simply too tantalizing to pass up, and both branches must transform and adapt to the challenges of today's and tomorrow's battlefields. In doing so, we will be postured to capitalize on these emerging concepts and technologies, ensuring the ADA and FA remain relevant and ready at all times.

Editor's note: This article also will appear in the next edition of Air Defense Artillery.

Colonel Gregory C. Kraak, Field Artillery (FA), until recently, was the Director of Future Force Integration and Concepts at the Field Artillery Center, Fort Sill, Oklahoma. He is currently serving as Senior Advisor to the Iraqi Ground Force Command in Baghdad in support of Operation Iraqi Freedom (OIF). He served as the Deputy Fire Support Coordinator for the 1st Infantry Division in Germany, and commanded 6th Battalion, 32nd Field Artillery (6-32 FA), a Multiple-Launch Rocket System (MLRS) battalion in the 212th FA Brigade at Fort Sill. He was the S3 for 2-319 FA and Fire Support Officer for the 2nd Brigade, both in the 82nd Airborne Division, Fort Bragg, North Carolina. He holds three master's degrees, including an MS in National Security and Strategic Studies from the Naval War College at Newport, Rhode Island.

Colonel Harry L. Cohen, Air Defense Artillery (ADA), is the Director of Combat Developments at the Air Defense Artillery Center, Fort Bliss, Texas. In his previous assignment, he was a Missile Defense Policy Project Officer in the Directorate of Strategic Plans and Policy, J3, on the Joint Staff at the Pentagon. He commanded 3-43 ADA and Task Force 3-43 during Operation Iraqi Freedom. He was the Executive Officer and S3 for the 69th ADA Brigade and also for 5-7 ADA (Patriot), both in Germany. He also commanded A Battery, 3-43 ADA, and during Operation Desert Storm, he was the Assistant S3 for Patriot Operations in Task Force 2-1 (Hawk/Patriot). He holds a Master of Public Policy from the Kennedy School of Government, Harvard University.

Pilot of BOLC II at Fort Sill—January 06



The pilot Basic Officer Leadership Class II (BOLC II) at Fort Sill, Oklahoma, is 8 January through 25 February 2006 under the auspices of the 30th Field Artillery Regiment (FAR). BOLC II, a six-week course (plus a week of in-processing), is designed for newly commissioned US Army lieutenants. BOLC II will teach officers of all Army branches basic combat leadership skills and prepare them for their first platoon leader positions after their basic branch BOLC III courses. Fort Benning, Georgia, also is running a BOLC II pilot course. Lieutenants begin this initial entry training from their pre-commissioning sources (BOLC I).

BOLC III will augment BOLC II competencies and immerse the lieutenants in their respective branches, providing branch technical and tactical training. Fort Sill's pilot BOLC III, a 15-week, four-day course, is 2 March through 6 June 2006.

The goal of the BOLC concept is to produce adaptable leaders who embody the Warrior Ethos and are competent warriors grounded in combat Soldier tasks and trained in their respective branch skills—warriors who are fully capable of leading Soldiers in today's contemporary operating environment (COE). BOLC is the first step in the officer education system transformation.

The 30th FAR has stood up a website to help new BOLC II students coming to Fort Sill: http://sill-www.army.mil/bolc2. Via the website's menu, students can access detailed information about Reporting Instructions/Directions, Dependents, Required Packing List, In-Processing, Finance, the Course Overview, 30th Regiment Contacts and Links. Also in preparation for this pilot class, the 30th FAR is standing up BOLC II A and B Companies in December and C and D Companies in March.

The Fires Brigade

Not Your Daddy's FFA HQ

By Lieutenant Colonel
Samuel R. White, Jr.

A campaign quality expeditionary land force requires equally capable tactical, operational and joint-capable fires organizations. In the Army of Excellence (AOE) structure, the division artillery (Div Arty), Field Artillery brigade and the corps artillery provided lethal fires at the tactical and operational levels—and they did it very well. However, these headquarters were not very modular; had few linkages to joint fires; had limited reconnaissance, surveillance and target acquisition (RSTA) capabilities; and had a staff optimized to execute only the deliver phase of the decide, detect, deliver and assess (D^3A) targeting process.

It is clear that a new fires organization had to be developed for the modular land force—one built around versatile combat power units and staffs that are more self-contained, sustainable and organized with capabilities for the full range of missions. It must be truly joint interdependent and contain adaptive, competent and confident Soldiers and leaders. The Fires Brigade was developed to fill this need.

The Fires Brigade is the primary executor of Army and joint fires for the ground commander in areas not assigned to brigade combat teams (BCTs). It is the only Army fires organization above the BCT and normally will be designated by the sup-

An M270A1 multiple-launch rocket system (MLRS) fires a guided MLRS (GMLRS) rocket—the latest addition to the MLRS family of munitions (MFOM). This GMLRS unitary variant carries a 200-pound class high explosive (HE) single warhead. (Photo courtesy of Lockheed Martin)

ported commander as the force FA headquarters (FFA HQ). The brigade routinely will be assigned to a division or corps but is completely networked with connectivity and liaison officer (LNO) packages to work directly for any joint, service or functional Marine force (MARFOR) HQ; joint forces air component command (JFACC); multinational HQ (NATO rapid reaction force); etc.

Fires Brigades are replacing the Div Arty, FA brigade and corps artillery as the FFA HQ for the ground commander. It is not a concept; it is reality. The first Fires Brigade in the Army, the 4th Fires Brigade at Fort Hood, Texas, was activated in December 2004. It is assigned to the 4th Infantry Division (4th ID) and has aggressively stood up units and built the team in preparation for an upcoming deployment in support of Operation Iraqi Freedom (OIF).

Organization. Like all BCTs and support brigades, Fires Brigades are neither organic to any Army organization or echelon nor focused on any specific region or area of responsibility (AOR). It is anticipated that when a division enters the Ready and Available phase of the Army's force generation model (ARFORGEN), it will be assigned a Fires Brigade as it is organized into an expeditionary force package. The Fires Brigade participates in division training events, readiness exercises and deployments. The division commander also may direct the Fires Brigade commander to help the BCT commanders train and prepare their Fires Battalions.

The Fires Brigade has organic units and receives other assigned or attached units based on task organization for a specific contingency operation or to meet stationing or other requirements. The Fires Brigade may or may not be stationed with a division headquarters or even collocated with some of the Fires Brigades' subordinate units. See Figure 1 for the basic design of a Fires Brigade.

The units organic to the Fires Brigade are: headquarters and headquarters battery (HHB), target acquisition battery (TAB), signal network support company (NSC), tactical unmanned aerial vehicle (TUAV) company, brigade support battalion (BSB) and a rocket/missile battalion. The brigade can be tailored with additional units and capabilities, either during the Ready and Available phase of the ARFORGEN or during actual operations in theater. A combination of one to six rocket/missile and cannon battalions may be assigned or attached to the Fires Brigade as well as other assets

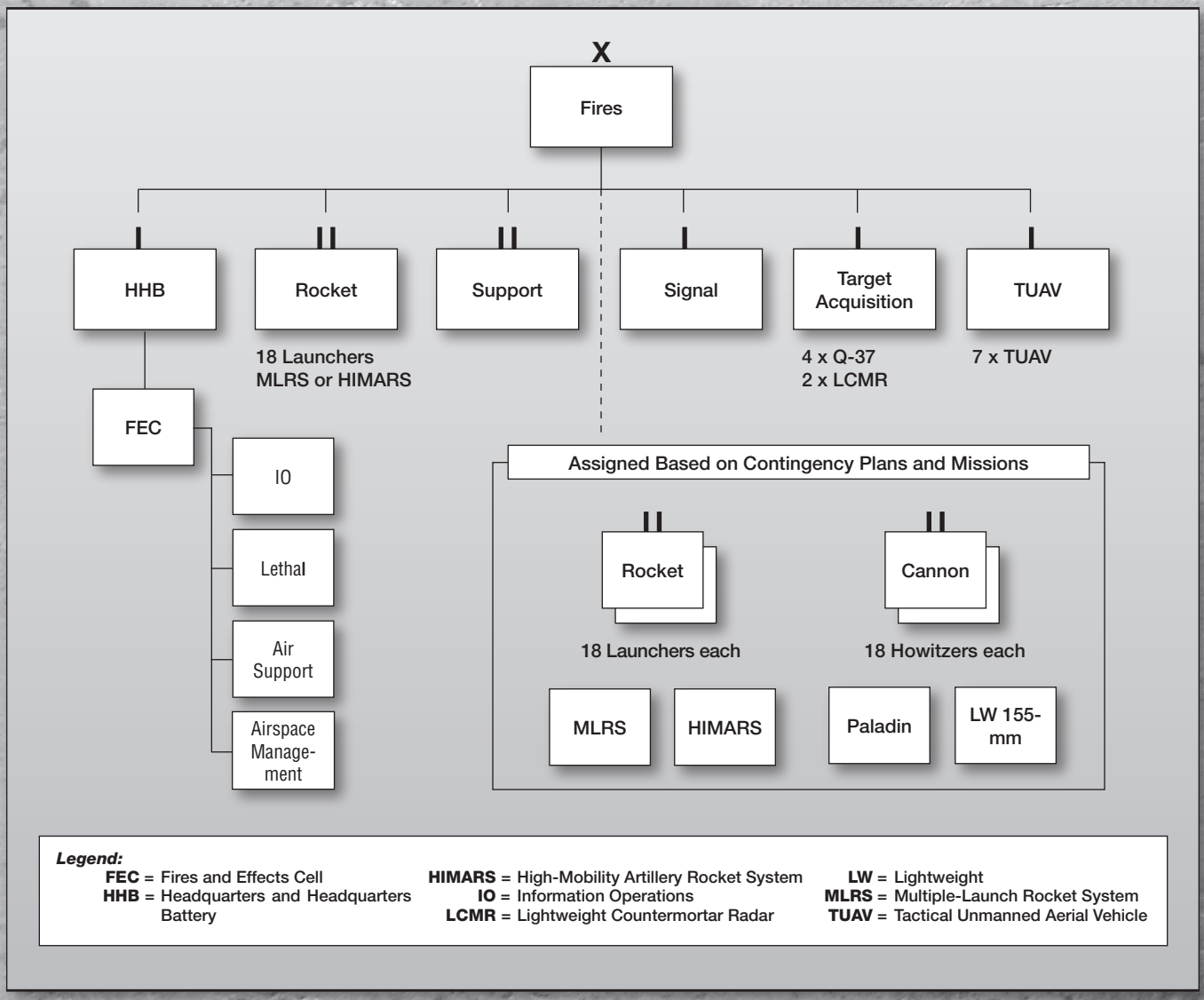


Figure 1: Fires Brigade ("Modularity Organizational and Operational Plan," Part X, "Fires Brigade Operational and Organizational Plan"). This is an example of a Fires Brigade tailored for high-intensity conflict.

and enablers as listed in Figure 2.

HHB. The Fires Brigade headquarters battery and assigned brigade staff is markedly different from past AOE artillery organizations. (See Figure 3 for the organization of HHB and the FEC.) The staff is more robust and provides expertise across a broader range of functional areas than before.

The fires and effects cell (FEC) in HHB provides the Fires Brigade staff expertise to coordinate lethal and nonlethal Army and joint fires, information operations (IO) and Army airspace command and control (A^2C^2).

FEC. The Fires Brigade FEC leads the D^3A targeting process for both lethal and nonlethal fires and effects for the Fires Brigade. It functions similarly to a BCT FEC as the primary integrator of fires and effects for the Fires Brigade. The deputy commanding officer (DCO) oversees the planning and targeting processes and execution.

Working closely with the S2 and S3 sections, the FEC is the staff agency responsible for integrating all lethal and nonlethal fires and effects available to the brigade. The FEC also coordinates the brigade fires and effects plans with adjacent, higher and subordinate FECs if the Fires Brigade is allocated ground maneuver forces. The Fires Brigade FEC participates virtually in the division targeting process and coordinates and synchronizes the various fires and effects tasks given the Fires Brigade.

Division or corps fire support elements (FSEs) no longer execute deep operations out of a division deep operations coordination cell (DOCC). The Fires Brigade receives the requirements for these shaping operations in the form of mission orders.

For example, if the division is conducting an attack to seize an objective or series of objectives, the Fires Brigade likely would receive effects tasks to isolate and reduce objectives, disrupt enemy reinforcements, protect flanks and interdict enemy artillery. The brigade FEC would lead the brigade staff in the D^3A process, which will turn the division commander's intent and desired effects into specific targets, RSTA tasks and engagements. (See Figure 4 on Page 18.)

TAB. The TAB is organized with meteorological (Met), survey, target production and AN/TPQ-37 Firefinder and lightweight countermortar radars (LCMRs) to provide functional support to the Fires Brigade, division/corps and support brigades as well as reinforcing support to the maneuver BCTs. The TAB provides weapons locating capabilities to support the targeting and force protection efforts of the division as well as Met and survey enablers to ensure accurate, predicted fires. The target processing section (TPS), although organic to the TAB, operates out of the brigade operations and counterfire section in the brigade tactical operations center (TOC).

- Access to Army, Joint, and Multinational Sensors
- Allocation of Joint and (or) Multinational Air, Surface and Subsurface Fires
- Allocation of Extended-Range-Multipurpose (ER-MP) Unmanned Aerial Vehicles (UAVs)
- Army and Joint Information Operations (IO) Assets to Support Lethal and Nonlethal Effects
- Additional Target Acquisition (TA) and Assessment Capabilities from the Battlefield Surveillance Brigade (BfSB) and Combat Aviation Brigade (CAB)
- Allocation of Force Protection Assets and Coverage from the CAB
- Maneuver Forces to Conduct Limited Combined Arms Operations
- Logistics and Sustainment Support from Division or Theater Sustainment Brigades
- Level II/III Medical Support and Evacuation from a Theater Medical Brigade

Figure 2: Enablers and Assets for Fires Brigade Task Organization. These are in addition to the Fires Brigade's organic assets.

The division commander designates the Fires Brigade as the division's counterfire headquarters and may charge the Fires Brigade commander to manage and coordinate all counterfire radars in the division, including the radars organic to the BCTs. Although the BCTs retain their organic radars, the Fires Brigade (through the TPS) incorporates them into the overall radar plan so that coverage across the division is seamless and complementary radar coverage can be planned to protect BCTs when their radars are moving. The TPS recommends and coordinates search sectors within the division/corps area and adjusts coverage by TA radars as the situation develops.

Signal Company. The NSC provides signal maintenance, retransmission and network support and services to the brigade command post (CP) and the brigade's organic units. The company has one joint network node (JNN) and one command post node (CPN). These are sufficient to provide node coverage for internet protocol-based satellite communications to the brigade TOC and a jump TOC.

The BSB has an organic CPN for the brigade administration and logistics center (ALOC); the same capability is in each Fires Battalion. This capability allows the Fires Brigade to establish its own network as well as have continuous access to the joint network. Its network can move with the brigade.

TUAV Company. This company is equipped with the RQ-7 Shadow UAV, providing the Fires Brigade an organic TA capability out to about 125 kilometers. The brigade controls the launch, employment, recovery and maintenance of the Shadow UAVs.

The Shadow can be launched from a "rail" and recovered in a clear area that is roughly the size of a soccer field. It is equipped with electro-optical/infrared remote (EO/IR) sensors that provide day and night TA.

The TUAV company is organized into a headquarters platoon, one Shadow platoon with seven air vehicles and three ground control stations (GCS), one GCS platoon comprised of two GCS for control of extended-range-multipurpose (ER-MP) UAVs and a contract logistics support (CLS) section.

The ER-MP UAV is still in development. It will be larger than the Shadow with increased capabilities and logistical requirements. The ER-MP UAV will operate at ranges of up to 300 kilometers and carry advanced sensor and communications suites. It also will be able to be armed with multiple munitions to support Fires Brigade shaping operations. ER-MP UAVs will operate from improved airfields; therefore, combat aviation brigades (CABs) will maintain, launch and recover all ER-MP UAVs for the division or corps operations the Fires Brigade is supporting.

The Fires Brigade will be allocated a number of air vehicle missions by the division or corps headquarters. Its organic ER-MP GCS allows the CAB to hand over an ER-MP UAV to the Fires Brigade at a designated hand over point.

The organic A^2C^2 section in the Fires Brigade FEC conducts airspace coordination with the division or corps A^2C^2 cell, as necessary. The Fires Brigade executes its mission with the air vehicle and releases it to the CAB for recovery, maintenance and refit.

The Fires Brigade has a complement of small UAVs (SUAVs). The SUAV, or

Raven, is not part of the TUAV company. Three air vehicles and one GCS are in the brigade headquarters battery and in each rocket/missile battery. The Raven is a small, man-portable, hand-launched UAV designed to give battery commanders situational awareness and a "look beyond the next hill" capability—generally five to 10 kilometers in range.

BSB. The BSB provides logistics support (supply, maintenance, field services and transportation) to the Fires Brigade's organic units. It is multifunctional and composed of subordinate combat service support (CSS) units that sustain the Fires Brigade during all phases of operations.

The BSB has a distribution company and field maintenance company to supply, maintain and repair the brigade's organic elements. The BSB provides the ALOC functions for the Fires Brigade, oversees brigade logistics operations and provides oversight for subordinate battalion forward support companies (FSCs).

Rocket/Missile Battalion. There is one rocket/missile battalion organic to the Fires Brigade. It provides long-range fires to support the ground commander in shaping the battlespace and conducting counterstrike. In some cases, the battalion could reinforce the BCTs' Fires Battalions.

This rocket/missile Fires Battalion has either the M270A1 multiple-launch rocket system (MLRS) or M142 high-mobil-

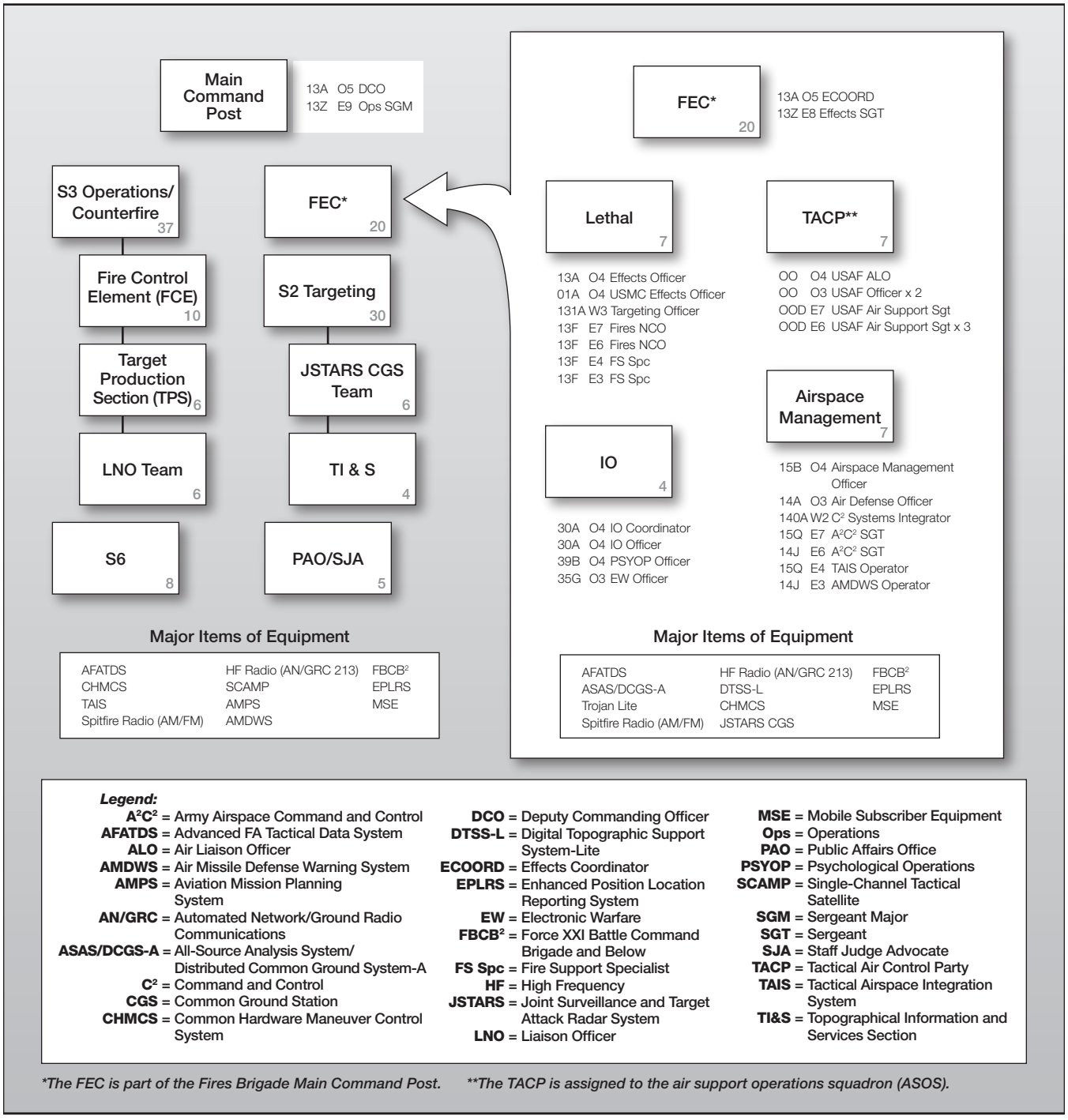


Figure 3: Fires Brigade Headquarters and FEC ("Modularity Organizational and Operational Plan," Part X, "Fires Brigade Operational and Organizational Plan")

- Force FA Headquarters (FFA HQ) for a Division, Corps, Marine Force (MARFOR) or Joint Task Force (JTF)
- Shaping and Counterstrike Fires and Effects for the Force
- Close Reinforcing Fires to Support Brigade Combat Teams (BCTs)
- Fires, Counterfire, ER-MP UAVs and Radar Coverage for the CAB, BfSB and Combat Support and Sustainment Brigades
- A Headquarters to Command and Control the Full Complement of Army and Joint Lethal and Nonlethal Capabilities

Figure 4: Fires Brigade Capabilities

ity artillery rocket system (HIMARS). Both units can fire the full suite of MLRS rockets and Army tactical missile system (ATACMS) missiles—known as the MLRS family of munitions (MFOM).

The Fires Brigade may be assigned any number of additional rocket/missile or cannon battalions from the Army's force pool. These battalions routinely will be stationed where Fires Brigade headquarters are.

Fires Brigade Employment. The Fires Brigade plans, prepares, executes and assesses operations to provide close support, shaping and decisive fires and effects for supported commanders. It can employ Army and joint air, surface and subsurface fires as well as special operations forces (SOF), IO, civil affairs (CA) and A^2C^2 elements. The Fires Brigade responsibilities are listed in Figure 5.

The Fires Brigade task organizes for specific missions and reorganizes for subsequent missions, when necessary. Fires Brigades may be task organized with long-range precision missiles, rockets, cannon artillery, ER-MP UAVs, counterstrike radars, IO, fixed- and rotary-wing air, and (or) other enabling capabilities.

The Fires Brigade may employ electronic warfare (EW) assets selected for their abilities to engage enemy C^2 systems. The command and control capabilities of the Fires Brigade allow it to plan, prepare, execute and assess strike missions with additional RSTA assets from other brigades under the Fires Brigade's operational control (OPCON).

The division/corps headquarters issues mission orders to the Fires Brigade specifying intended effects, additional capabilities OPCON to the Fires Brigade and joint capabilities available for the mission. The ability of the brigade to be tailored (selected forces based upon a mission) and task organized (temporarily organized units to accomplish a tactical mission) gives it extraordinary agility. Normally, the Fires Brigade is tailored by the Army force HQ (ARFOR) or joint forces commander (JFC) and, subsequently, task organized by the division or corps.

Fires Brigades—The Way Ahead. During the next three years, the Army will organize 11 more Fires Brigades between the active component (AC) and the Army National Guard (ARNG)—bringing the total force to 12 brigades. Three will activate in FY06 and FY07 and five more in FY08. (See Page 42 of this edition for the designations of the 12 Fires Brigades as proposed by the Center of Military History. The exact AC-ARNG configuration of these Fires Brigades is yet to be determined; therefore, these unit designations could change.)

While the 4th Fires Brigade at Fort Hood now has one Fires Battalion organic and one assigned, the total number of Fires Battalions assigned to Fires Brigades has not yet been determined.

Concurrent with the activation of the Fires Brigades and the conversion of the maneuver brigades to BCTs, the remaining Div Arty, corps artillery and some ARNG FA brigade headquarters will be deactivated. The Div Arty cannon battalions will become organic to the

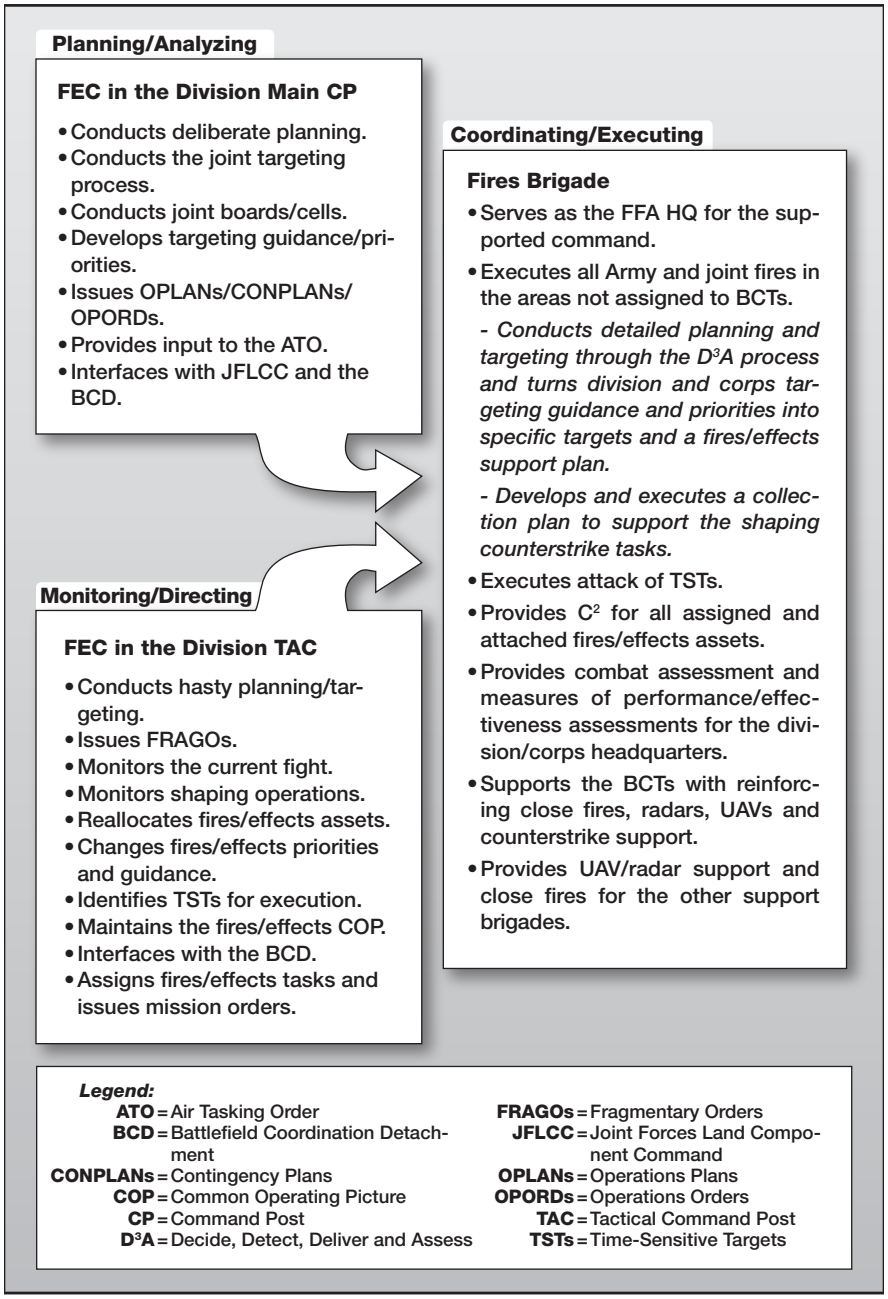


Figure 5: Fires and Effects Responsibilities in a Division

BCTs while Div Arty MLRS battalions and FA brigade battalions either will be reassigned to Fires Brigades, deactivated or reorganized as another type of unit.

The Doctrine Department at the Field Artillery School has begun developing the first Fires Brigade field manual (FM), *FM 3-09.24 The Fires Brigade*. It is the highest priority FM that the school is developing. The goal is to complete the manual as the next group of Fires Brigades are activated and begin organizing in late FY06 or early FY07.

There is a great deal of work to fully develop Fires Brigades as the tremendous warfighting organizations they are designed to be. Leaders and Soldiers from the 4th Fires Brigade have paved the way along this important path and have shared many organizational lessons learned. As the brigade heads to OIF, it will be able to share operational lessons as well.

During the coming year, much thought and effort will be put forth across the Field Artillery to refine organizational designs and concepts as well as to codify Fires Brigade and Army doctrine. In the end, the Fires Brigade will prove an indispensable organization—a trained and ready member of the joint force.

Lieutenant Colonel Samuel R. White, Jr., is a Futures Concepts Integration Officer in the Concepts Division of the Futures Development Integration Center (FDIC), Fort Sill, Oklahoma. In his previous assignment, he commanded 1st Battalion, 30th Regiment, part of the Field Artillery School, also at Fort Sill. Among other assignments, while in the 4th Infantry Division at Fort Hood, Texas, he served as the Division Artillery S3, Chief of Operations, G3, and a Battalion Executive Officer. He also served in a variety of assignments at the National Training Center (NTC) at Fort Irwin, California, including as a Brigade Fire Support Trainer. During Operations Desert Shield and Storm, he commanded the Howitzer Battery of the 2nd Squadron, 2nd Armored Cavalry Regiment out of Bamberg, Germany, the same in which he served as the squadron Fire Support Officer (FSO).

Overview:
Modular BCTs, Divisions and Corps

The Army is well down the path of reorganizing its warfighting units to more efficiently and effectively support the joint force commander (JFC). Brigade combat teams (BCTs) are replacing divisions as the warfighting building blocks in the modular Army.

Three standard BCT designs replace the task-organized brigades formed in the past: the Heavy Brigade Combat Team (HBCT), which has a balanced mix of armor and mechanized infantry; the Infantry Brigade Combat Team (IBCT), which has light infantry, airborne and air assault; and the Stryker Brigade Combat Team (SBCT), which is a medium brigade equipped with the Stryker vehicle. BCTs are developed with organic maneuver, fires, reconnaissance, combat support and sustainment units.

Beginning in 2014, the Army will start building the first Future Combat System BCT (FBCT).These FBCTs will have greater lethality and be easier to deploy and sustain than the current force.

At the higher tactical and operational levels, the Army has reorganized the numbered army, corps and division headquarters for more tactical and operational flexibility across the full spectrum of operations and increased the joint headquarters capability and focus. The armies are regionally tailored and continue to function as the Army Service Component Command (ASCC) for their regional combatant commander (RCC). They provide support to other services, execute administrative control (ADCON) over Army forces in their area of responsibility (AOR) and serve as the combined and (or) joint forces land component command (CJFLCC), if designated by the RCC.

Divisions and corps provide tactical and operational battle command of assigned forces. A corps will be organized as an operational-level headquarters and, with joint augmentation, can function as the headquarters for a JFLCC or joint task force (JTF). It also could be used as an intermediate headquarters to provide command and control for two or more divisions and function as the Army force (ARFOR) as part of a joint force.

The corps will have neither specific AORs assigned on a continuing basis nor subordinate units assigned when not deployed as a warfighting headquarters. The division will function as a tactical or lower operational headquarters and is designed to control six basic types of brigade formations: the maneuver BCTs (HBCT, IBCT and SBCT), combat aviation brigade (CAB), battlefield surveillance brigade (BfSB), combat support brigade (CSB), sustainment brigade and Fires Brigade.

Both corps and divisions may be assigned training and readiness oversight (TRO) responsibilities for BCTs and support brigades by the major command (MACOM) responsible for providing trained and ready forces to the RCCs. However, they have no organic BCTs.

The fires and effects system, which supports this modular land force, has undergone significant reorganization and redesign. It has emerged as an indispensable, expeditionary multiplier for combined arms commanders with an added capability to deliver and integrate fires and effects over large geographical areas with increased speed and precision. At the tactical level, a cannon Fires Battalion is organic to every BCT in the Army and fire support teams (FISTs) and fires and effects personnel are organic to every maneuver and reconnaissance battalion in those BCTs.

The BCT fires and effects cell (FEC) organic to the BCT headquarters has been expanded to give the brigade commander a staff cell uniquely capable of coordinating fires and effects for the brigade. In fact, FECs at every echelon ensure the successful coordination, integration and application of fires and effects for the supported commander. At the operational level, joint fires interdependence has shaped the development of the Army-level operational fires and effects directorate (OF&E)—this is the "FEC" at the Army level—and is the impetus for aligning the battlefield coordination detachments (BCDs) with USAF air operations centers (AOCs).

The Army's First Fires Brigade

When the 4th Infantry Division (Mechanized) (4th ID) redeployed from Iraq in March 2004, it faced two missions: reset the division for a deployment to Iraq again in a few years and transform into a modular force. The latter meant sweeping changes across the division, especially for the 4th ID Artillery (Div Arty). During the past year, the Div Arty reorganized into the Army's first modular Fires Brigade by redistributing its FA assets and establishing a new strike battalion and support units.

After receiving the transformation order, the Div Arty staff conducted a mission analysis of the new formations and the modified tables of organization and equipment (MTOEs). The staff identified the critical tasks and gates that had to be met to reassign the three direct support (DS) cannon battalions—3rd Battalion, 16th Field Artillery (3-16 FA), 4-42 FA and 3-29 FA; redirected equipment within the Div Arty and division; created a strike battalion (2-77 FA), a brigade support battalion (589 BSB) and a signal network support company (324 NSC); and redesigned A/26 FA target acquisition battery (TAB) and the Div Arty staff.

Parallel planning at the battalion level ensured efficient and on-schedule transitions. The Div Arty staff held weekly meetings and developed a biweekly situation report (SITREP) shared with the entire FA community.

The staff established modularity working groups to aid planning and execution of the Fires Brigade transformation. The working groups thoroughly analyzed the modular Fires Brigade MTOE and submitted DA Form 2028s for changes and improvements. The document assistance review team (DART) held a forum for units to make MTOE change recommendations or adjustments.

The Div Arty staff identified more than 50 changes submitted during the DART meetings. Within three months, the three cannon battalions were reassigned and 2-20 FA, multiple-launch rocket system (MLRS), was re-vamped with the TA sections organized as a separate battery.

The division's cavalry battalion and brigade fire support elements (FSEs), 4th Aviation Brigade FSE and Div Arty headquarters and headquarters battery (HHB) and staff also transformed into a modular structure.

The Div Arty used tools to facilitate an effective transition: clear information flow, a sequential task list, immediate leader establishment in newly created units, Soldiers' training and certification and a long-term training plan. The unit status report (USR), used as a benchmark, provided commanders a good assessment of where the unit was during the transformation and defined priorities for the steps ahead.

Resources for the transformation are available on the Fires Knowledge Network (FKN) on Army Knowledge Online under "Subgroups, FA Active Units, 4th ID Fires Brigade."

In December 2004, the 4th ID Div Arty transformed into the 4th Fires Brigade (see the figure). It also received personnel and equipment for the newly created 589 BSB and the 324 NSC. Both units were activated on 16 June and continue to receive personnel and equipment.

The BSB provides combat service support (CSS) to the Fires Brigade. Previously, Div Arty units relied on CSS from external units. Under the modular concept, the Fires Brigade supports itself with a distribution company, a maintenance company and a forward support company (FSC) for its MLRS battalions.

Although still short some key equipment, the 589 BSB provides the full spectrum of direct support to the 4th Fires Brigade. Because of its rapid transition, the 4th ID headquarters designated the BSB also as the primary support for the division's special troops battalion (STB), with more than 800 personnel and 200 pieces of equipment.

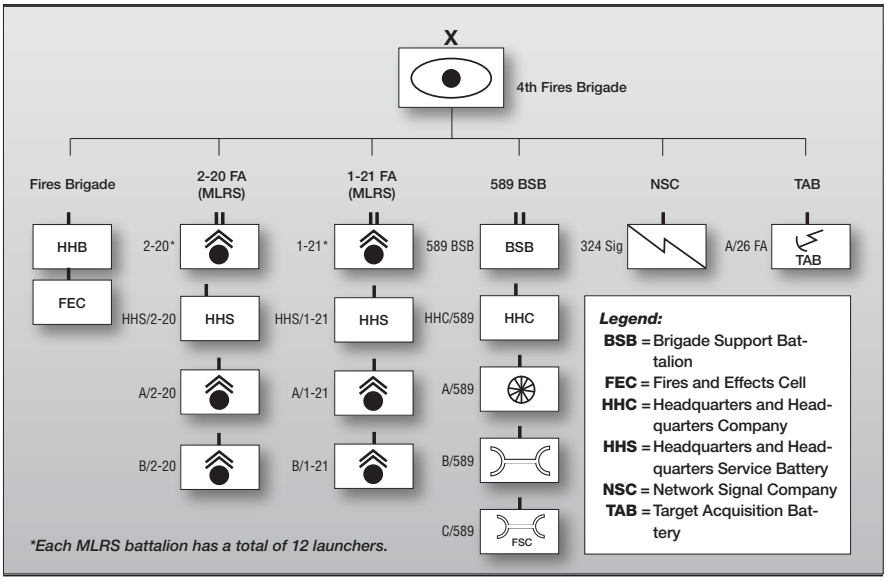
The new modular organization also adds an organic NSC to the Fires Brigade. The 324 NSC uses the Army's new joint node network (JNN) system to provide a wide range of data transfer and connectivity formerly provided by an external signal unit.

On 29 July, the Fires Brigade's again grew. The 1-21 FA (MLRS) joined the 4th Fires Brigade, adding the capabilities of another M270A1-equipped battalion. The unit was organic to the 1st Cavalry Division and recently returned from a tour in Iraq.

Continuing to reorganize, the 4th Fires Brigade also is preparing for its upcoming deployment to Iraq. Soldiers are training on new equipment and in mission-essential task list (METL) tasks.

Just less than a year after its effective date, the Army's first Fires Brigade has almost finished its transformation. The 4th Fires Brigade leads the way for the Field Artillery in transforming into a modular Fires Brigade. The lessons learned from transformation and deployment will help prepare and improve future Fires Brigades across the Army and, again, prove the power and agility of the *King of Battle*.

CPT William H. Ward
Chemical Officer
4th Fires Brigade, Fort Hood, TX



Command and Control Structure of 4th Fires Brigade. Note that the 4th Fires Brigade does not have a tactical unmanned aerial vehicle (UAV) battery yet.

2nd Division Warfighter:
EBO from the Operational to the Tactical Levels

By Chief Warrant Officer Three Harry L. Pershad and Lieutenant Colonel David W. Napier

2nd Division Mission: *On order, Division attacks from PL [Phase Line] Blue to PL Green to defeat Second OSC [Operational Security Command] forces IOT [in order to] protect VII Corps' eastern flank. On order, secures key terrain along PL Green and passes VI Corps IOT enable Third Army to rapidly isolate OBJ [Objective] Panther.*

During the 2nd Infantry Division's June Warfighter exercise in Korea, we employed effects-based operations (EBO) to achieve the commander's objectives. With the reorganization from a division headquarters to a modular division headquarters, the targeting team also reorganized as the Joint Operational Effects (JOE) Action Group, bringing together the various elements of the division staff. The group planned, coordinated and implemented EBO to achieve the commander's intent.

This article defines EBO as employed in the 2nd Division Warfighter and outlines the JOE Action Group organization and EBO methodology—down to execution at the tactical level.

2nd Division EBO Defined. The Joint Warfighting Center Joint Doctrine Series Pamphlet 7 "Operational Implications of Effects-Based Operations (EBO)," dated 17 November 2004, states "Effects-based operations are planned, executed, assessed and adapted based on a holistic understanding of the operational environment. They influence or change political, military, economic, social, infrastructure and informational (PMESII) systems behaviors or capabilities through the integrated application of selected instruments of power to achieve directed policy aims."

With this understanding of the EBO approach, the 2nd Division adapted the EBO cycle in the pamphlet to accomplish its Warfighter exercise missions in Korea. (See Figure 1.) The EBO process was applied as a continuous, interactive cycle with five stages: knowledge, effects, application, assessment and adaptation. (See Figure 2 on Page 22 for the definition of key EBO terms.)

During the *knowledge* stage, we developed comprehensive insights into the adversary (system-of-systems analysis), the environment and our own capabilities. We identified key nodes and their links to systems as well as the adversary's cohesive strengths and weaknesses. Then we looked at which nodes the adversary valued and put the nodes at risk or removed them.

In the *effects* stage, we reviewed the commander's intent and guidance with the operational objectives and then extrapolated the desired effects to achieve those objectives. Once the effects were defined, we could determine their measures of effectiveness (MOEs).

We further developed tactical-level tasks to achieve the effects. Each tactical task had a specific measure of performance (MOP) that determined when or if the task had been completed effectively.

The *application* stage determined which nodes were connected to which effects, what actions we would take and who controlled the resources that delivered the action to produce the desired effects. Once we applied the effect-node-action-resources (E-N-A-R) process, we tasked 2nd Division forces to achieve those effects and requested support from joint forces components, as needed.

During the *assessment* stage, the 2nd Division staff members used the MOPs (focus on task accomplishment) and MOEs (focus on effects attainment) collectively to assess operations performed and identify trends that could affect future operations.

In the *adaptation* stage, we saw how existing conditions were different from their pre-conflict status and made pertinent changes in plans and actions to increase success. At the same time, we reduced the risk of catastrophic surprise

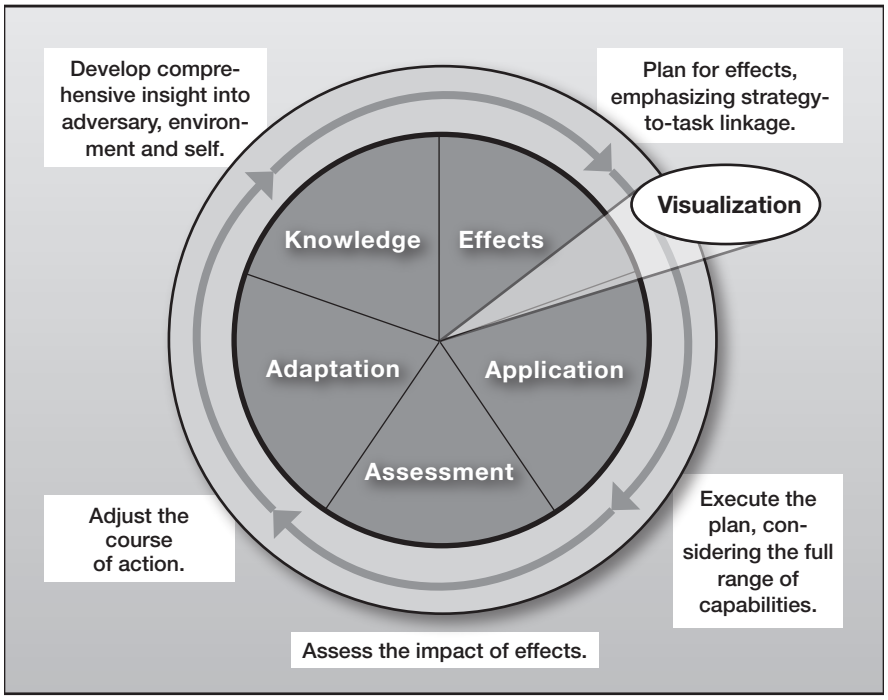


Figure 1: Adapted Effects-Based Operations (EBO) Process

or miscalculation based on information from the assessment stage.

JOE Action Group. This group consisted of elements outlined in Figure 3. These elements came together for JOE Action Group meetings, similar to the more traditional targeting meetings, under the chief of staff with the fires brigade commander as his deputy. The group met daily to refine the EBO process and provide a running estimate of the status of the operational objectives' achieving the commander's intent.

The JOE Action Group EBO process was embedded in the military decision-making process (MDMP) found in *Field Manual (FM) 5-0 Army Planning and Orders Production* (20 January 2005). Figure 4 cross walks the MDMP with EBO and outlines the JOE Action Group tasks performed in each part of the MDMP/EBO process.

The commander's intent drove the EBO process. Figure 5 on Page 23 is an excerpt from the 2nd Division Commander's intent for the Warfighter.

Using EBO embedded into the MDMP, we developed our JOE campaign plan (see Figure 6 on Page 23). This plan captured the 2nd Division's lines of operations (LOOs)—which are the same as the commander's operational objectives—and included which enemy units would be affected by each LOO, the effects desired in each LOO and the overall purpose of the LOOs. The campaign plan also showed if the effect had been achieved or not, if the effect was still a "work in progress" or if the effect even had been assessed to determine if it had been achieved. At a glance, the JOE Action Group could determine the status of the plan.

Desired Effect: The desired physical and/or behavioral state of a political, military, economic, social, infrastructure and information (PMESII) system that results from a military or non-military action or set of actions.

Link: The relationship between nodes. Links can be behavioral, physical, or functional.

Node: A person, place or physical thing that is a functional component of a system.

Action: An activity directed at a specific node.

Resources: The forces, material and other assets that can be employed to conduct an action.

Figure 2: Key Terms and Definitions of EBO. ("Operational Implications of Effects-Based Operations [EBO]," The Joint Warfighting Center Joint Doctrine Series Pamphlet 7, 17 November 2004)

Lethal Effects Cell—Surface and Fixed- and Rotary-Wing Lethal Assets

Nonlethal Effects Cell—Information Operations (IO), Civil Military Operations (CMO), Public Affairs (PA), Electronic Warfare (EW) and Psychological Operations (PSYOP)

Protection Cell—Air and Missile Defense, Military Police (MP), and Chemical, Biological, Radiological and Nuclear (CBRN)

Special Advisors—Division Engineer and Staff Judge Advocate (SJA)

Planning Staff—G2 Intelligence Planner and Targeting/Battle Damage Officer; Intelligence, Surveillance and Reconnaissance (ISR) Officer; G3 Planners and Staff Weather Officer

Figure 3: Joint Operation Effects (JOE) Action Group. These elements came together for JOE Action Group sessions, similar to traditional targeting meetings. The 2nd Division Chief of Staff ran the JOE Action Group with the Fires Brigade commander as his deputy. (The effects coordinator, or ECOORD, is responsible for coordinating all actions before and after the JOE Action Group Meetings.)

MDMP	EBO Stage	Joint Operations Effects Tasks
Mission Analysis	Knowledge and Effects Development	• Understand the battlespace environment. • Conduct system-of-systems analysis on adversary. Identify key nodes as high-value targets (HVTs) and center of gravity (COG). • Conduct system-of-systems analysis on friendly forces. Identify high-value assets (HVAs) and capabilities. • Understand the commander's objectives, intent and end state. • Develop desired effects measures of effectiveness (MOEs). • Link effects to nodes.
Course-of-Action Development and Analysis	Force Application and Effects Development	• Develop a campaign plan with lines of operations (LOOs). • Develop tactical tasks and measures of performance (MOPs). • Develop a high-payoff target list (HPTL). • Complete the linkage of Effects to Nodes to Actions to Resources (E-N-A-R). • Identify effects taskings for division forces and supporting joint forces.
Mission Execution and Assessment	Assessment and Adaptation	• Assess MOPs (tactical tasks accomplishment). • Assess MOEs (effects attainment). • Recommend changes to desired effects, key nodes (HPTL), tactical tasks or MOPs. • Adapt plans and actions to increase success while reducing risks.

Figure 4: JOE Action Group Targeting Activities and Tasks. This figure cross walks the military decision-making process (MDMP) with EBO and outlines the group's tasks performed in each part of the process.

Reading Figure 6 from right to left, the Purpose mirrors the 2nd Division's mission and intent. The Desired Effects, as determined from the commander's intent, are the MOEs. If we achieved these effects, we accomplish the LOOs and, ultimately, the mission.

On the campaign plan, the color-coded circle above each enemy unit (after each LOO) shows the status of desired effects on that unit, as interpreted by the legend in Figure 6.

As part of the campaign plan, we determined tactical tasks with MOPs for each LOO that, when executed, would accomplish the LOO. For example, Figure 7 on Page 24 shows LOO 1 "Defeat disruption zone forces" with its two MOEs and one tactical task (a sample task) required to accomplish the LOO: "Defeat the 5th Infantry Division." This tactical task had five MOPs, as outlined in the figure.

> Focus our shaping operations to control the tempo of the operation, deny the enemy the ability to conduct a coherent defense in depth. Use operational fires to destroy enemy forces in the 2nd Division AO [area of operations] in order to retain flexibility and posture the Division to seize opportunities presented as the enemy reacts to the Division's actions….It is essential that we conduct aggressive counterreconnaissance to deny enemy observation and targeting of high-value assets and to prevent enemy interdiction of our lines of communications that can disrupt Division sustaining operations. Finally, we must establish conditions throughout our AO to rapidly pass VI Corps.
>
> Major General George A. Higgins
> Commander, 2nd Infantry Division
> Camp Red Cloud, Korea

Figure 5: Excerpt from the Commander's Intent, 2nd Division Warfighter Exercise, June. The commander's intent and guidance determine the LOOs in the campaign plan.

Air power was the weapon of choice to execute that tactical task so it was entered on the air power integrated tasking order (ITO) each day until the task was completed. Using ITO days, a color-coding

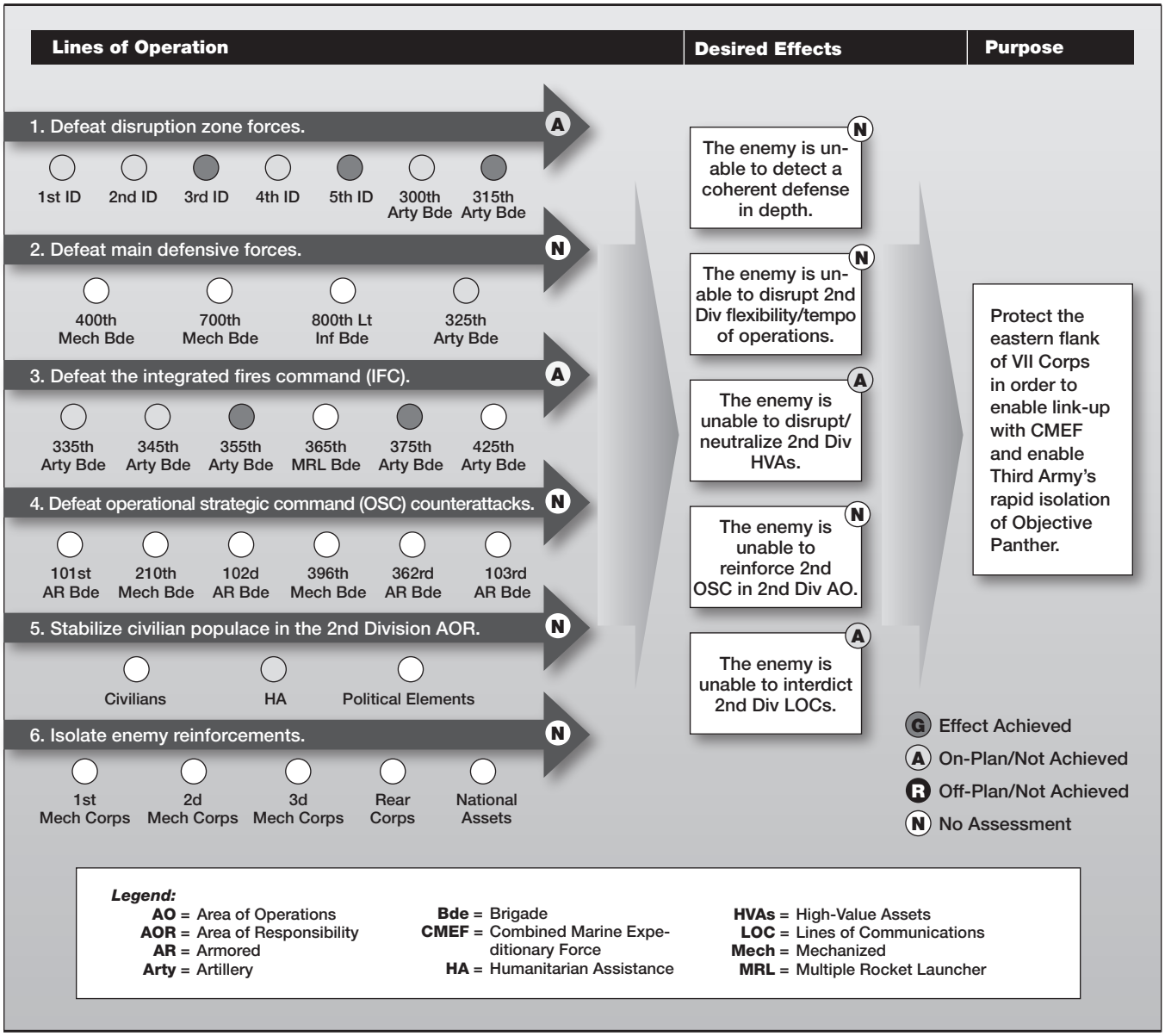


Figure 6: Joint Operational Effects Campaign Plan. The LOOs are the commander's objectives.

system and arrows (as explained in the "MOP Assessment Methodology" at the bottom of Figure 7), the JOE Action Group could tell at a glance the status of the task and each of its MOPs.

The accomplishment of the tactical tasks is measured objectively by the MOPs while the LOO, which has several tactical tasks to accomplish, all of which are in various stages of execution and levels of success, has to be measured more subjectively. The letter at the end of each LOO's arrow on the campaign plan (Figure 6) shows the overall status of the LOO subjectively, based on the status of the supporting tactical tasks.

JOE Action Group Methodology. First we divided our area of operations (AO) using kill boxes as described in the "Combined Forces Command (CFC) Publication 3-1 Joint Fires-Korea." This allowed us to manage air, ground and intelligence, surveillance and reconnaissance (ISR) assets in our battlespace on a common reference system.

Kill Boxes in Korea. These kill boxes use altitude as a means of separation between ground and air assets and are color coded as green, purple and blue. A green kill box denotes air delivery assets that must coordinate with the ground commander for approval to release ordnance. The green kill box usually is used for decisive ground fights or when employing close air support (CAS).

The purple kill box allows joint operational assets to engage targets without coordination from either the ground or air commander; however, the ground and air assets must adhere to the established altitude separation. The purple kill box usually is employed from the coordinated fire line (CFL) to the ground force weapons systems' normal or extended range.

A blue kill box shows where ground component units must coordinate with the air component commander to deliver fires. These kill boxes are used beyond purple kill boxes.

Our theater kill box approach allows us

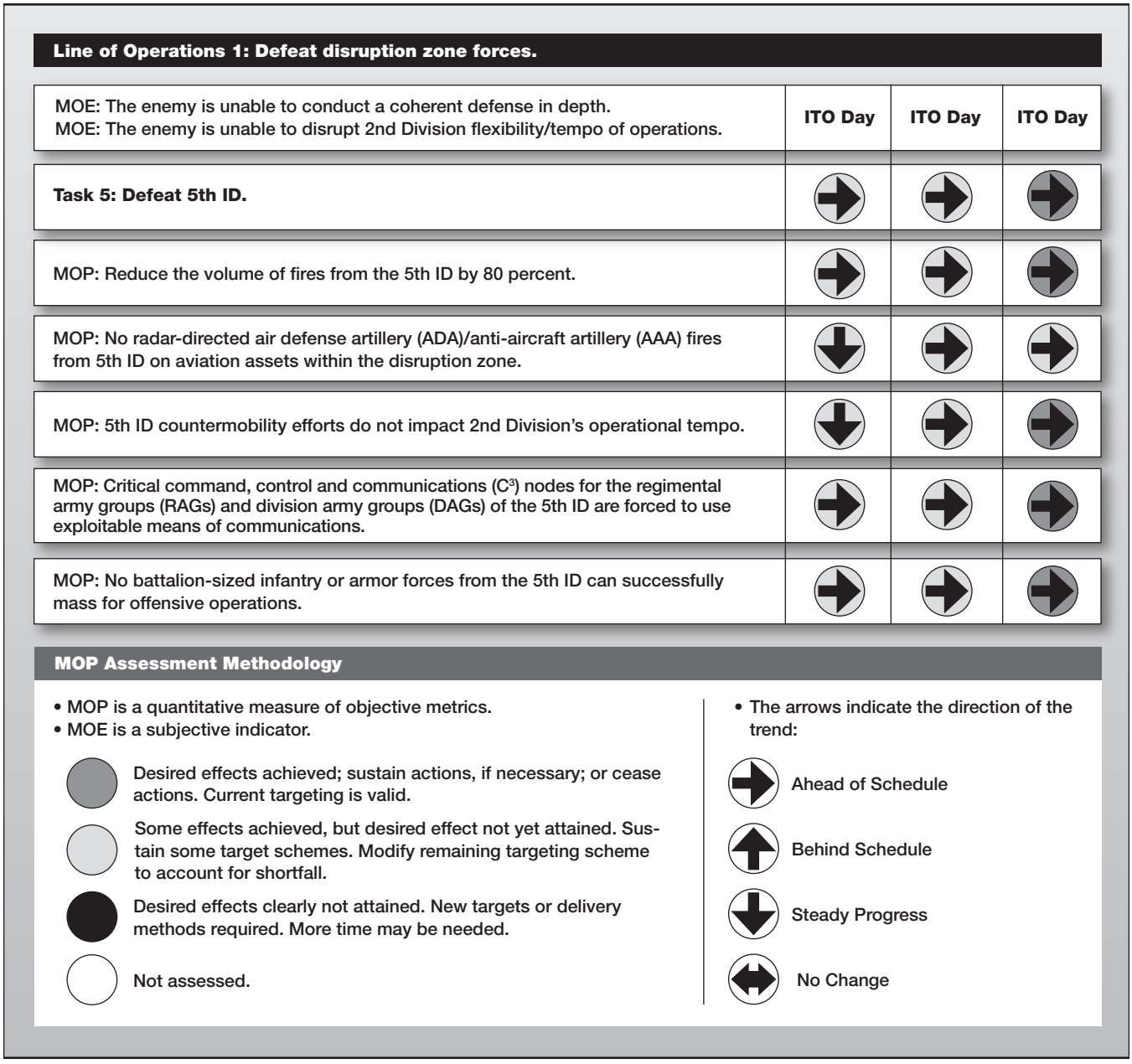


Figure 7: This figure shows a sample tactical EBO task with its MOEs, MOPs and the MOPs' status by integrated tasking order (ITO) day. The figure also shows the MOP assessment methodology.

to prioritize shaping effects and maintain flexibility as to when and where to engage the enemy. It also allows us to develop target areas of interest (TAI) for the combat aviation brigade (CAB) and leverage joint operational fires, giving air component assets maximum flexibility to achieve the desired effects.

JOE Action Group Meetings. Directed by the Chief of Staff, the JOE Action Group daily reviewed the desired effects and the assessments on the LOOs and their tactical tasks and approved nodes that, when resourced, would produce a desired effect on the overall mission.

An informal assessment group presented its findings to the JOE Action Group for review and approval. Members of the assessment group were the chief of the lethal effects cell (the effects coordinator, or ECOORD), chief of the nonlethal effects cell, air liaison officer (ALO), G2 battle damage officer and the division targeting officer.

Then the G2 and G3 current operations section presented an overview of the situation from both the friendly and enemy perspectives.

The planning staff presented the commander's guidance and intent for future operations, the commander's operational objectives and the staff's vision of courses of action (COAs) to achieve those objectives.

Based on this input, the chief of staff gave guidance on what effects or conditions we should establish that day to shape the battlefield for the decisive fight the next day. He also approved the CAB's mobile strike, if we planned one for that day's ITO.

Based on the planning staff's presentation, the JOE Action Group then reviewed and refined the next 24- to 72-hour shaping effects and adjusted them to achieve the commander's objectives, as necessary. The JOE then wargamed 72- to 96-hour shaping effects and approved the target list.

Finally the chief of staff gave guidance for operations 96 to 120 hours out.

Fragmentation Order (FRAGO) and Preparations for Execution. After the JOE Action Group meeting, the chief of staff, ECOORD, ALO and chief of the nonlethal effects cell conducted a video teleconference (VTC) with the division's major subordinate commands (MSCs), presenting the overall effects focus for the next 72 hours. They also provided information on the anticipated focus of the division's effects for the 96- to 120-hour period. After the VTC, they published an electronic daily effects FRAGO with effects taskings and distributed it to the MSCs.

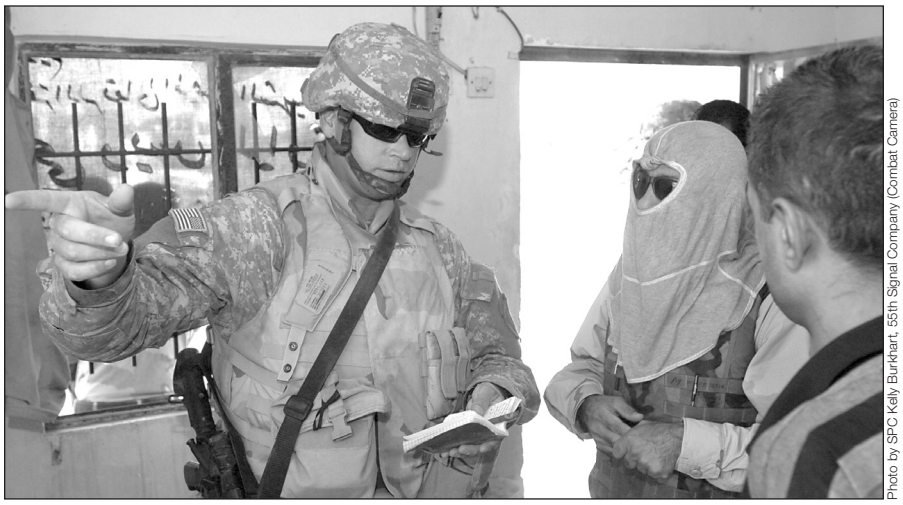


Photo by SPC Kelly Burkhart, 55th Signal Company (Combat Camera)

SSG Ellis Majetich, 304th Psychological Operations (PSYOP) Company, and interpreter (center) talk to an Iraqi man while on patrol in Baghdad, 31 August 2005. PSYOP is part of nonlethal effects integrated with lethal effects in EBO.

The major products of the JOE Action Group are the effects tasking synchronization matrix, the candidate target list (lethal and nonlethal) and the no-strike and restricted target lists. The effects tasking synchronization matrix provided guidance for the collection manager and FA intelligence officer (FAIO) within the analysis control element (ACE).

The division targeting officer and intelligence targeting officer (as well as other staff elements of the division headquarters) reviewed the candidate target list for operational validity and confliction of MSC and division targets. The two targeting officers also reviewed the target list for compliance with the laws of armed conflict and rules of engagement (ROE), along with the staff judge advocate (SJA).

As they identified restrictions on certain targets, the targeting officers annotated the restrictions on the individual air support requests (ASRs) to help the air component weaponeers and targeting personnel match capabilities to effects within those restrictions. To produce the full spectrum of simultaneous effects on the battlespace, the nonlethal cell coordinated nonlethal effects, such as electronic jamming, IO and humanitarian aid.

The campaign plan was executed and assessed and the EBO cycle continued.

This effects-based approach improved campaign planning, execution and assessment by emphasizing linking operational objectives to tactical-level actions through a specified set of effects (objective to E-N-A-R). In addition to meeting the requirements of EBO tasks listed in Figure 4, the process ensured the command and staff collaborated on planning and execution and attained the commander's operational objectives based on system behaviors rather than accomplishing discrete tasks.

Chief Warrant Officer Three Harry L. Pershad is the Targeting Officer for the 2nd Infantry Division at Camp Red Cloud, Korea. He also was the FA Intelligence Officer (FAIO) for the 2nd Division. His previous assignments include serving as the Targeting Officer for the Combined and Joint Task Force-180 in Afghanistan and, while stationed at Fort Bragg, North Carolina, as the FAIO for the XVIII Airborne Corps Artillery, Counterfire Officer for 18th Field Artillery Brigade, and Targeting Officer for the 3rd Brigade and Radar Section Leader in 2nd Battalion, 319th Airborne Field Artillery, the latter two in the 82nd Airborne Division. He is a graduate of the Joint Targeting Course, Dam Neck, Virginia, and the Joint Firepower Control Course, Hurlburt Air Field, Florida.

Lieutenant Colonel David W. Napier was the Effects Coordinator (ECOORD) for the 2nd Infantry Division in Korea. Currently, he is the S3 for the 4th Brigade, 75th Division (Training Support), Fort Sill, Oklahoma, where he deployed to Louisiana as the Defense Coordination Element (DCE) Team Chief for the Federal Emergency Management Agency (FEMA) Region VI in support of Hurricane Katrina relief efforts. Previous assignments include serving as the S3 for the 214th Field Artillery Brigade during Operation Iraqi Freedom. He is a graduate of Air Command and Staff College at the Air University, Maxwell Air Force Base, Alabama.

RCT-1 Fires in the Battle of Fallujah

By Lieutenant Colonel
Keil R. Gentry, USMC

After three tours in Iraq in the past three years, my greatest lesson learned is that basic fire support principles remain valid throughout the spectrum of warfare. With some adjustment, they are applicable in counterinsurgency and urban operations. It is in the nontraditional application of these principles that it gets interesting, requiring fire supporters to adapt counterfire organizations and procedures, coordination measures, direct support (DS) means and targeting procedures.

This adaptation was clear in the second battle of Fallujah—Operation Al Fajr (meaning "new dawn")—from 8 to 30 November 2004, perhaps the most intense urban fight for US Marines since the 1968 Battle of Hue City in Vietnam.

During Operation Al Fajr, the I Marine Expeditionary Force (IMEF) was in command of the Coalition Forces, including Iraqis, the 1st Marine Division (1st Mar Div) and elements of the 1st Cavalry (1st Cav), 1st Armored (1st AD) and 1st Infantry (1st ID) Divisions. (See the article "TF 2-2 IN FSE AAR: Indirect Fires in the Battle of Fallujah" by Captain James T. Cobb, et al, in the March-April edition.) Fallujah is about 40 kilometers west of Baghdad.

At the time of the battle, Fallujah, a city of approximately 250,000, only had about 60,000 people left as most had fled. The Interim Iraqi Prime Minister asked the Coalition Force of about 10,000 to rid the city of an estimated 6,000 insurgents and foreign terrorists. I MEF cordoned the city and assaulted the enemy in the dense urban environment, clearing buildings and fighting in the streets as the force swept down six corridors from north to south.

Background. The 1st Mar Div Regimental Combat Team-1's (RCT-1's) Field Artillery had the primary mission of counterfire throughout the tour in Iraq, including in Operation Al Fajr. Battery A, 1st Battalion, 11th Marines (A/1/11), M/4/14 and A/3-82 FA all fired counterfire missions in support of RCT-1.

In a shift from traditional practice, RCT-1 became the counterfire headquarters for all I MEF units within M198 range (30 kilometers) from March 2004 through March 2005. Usually, an artillery regimental or battalion headquarters assumes the mission of counterfire headquarters. An artillery battalion also normally supports an infantry regiment. In this case, an artillery battery supported an RCT, and the RCT headquarters cobbled together a counterfire headquarters capability in its organic fire support coordination center (FSCC). This counterfire cell included Marines from the counterbattery radar platoon's target processing center (TPC) from A/1/11 during Operation Iraqi Freedom (OIF) II-1 and M/4/14 during OIF II-2.

To put the scale of the task into perspective, from 11 September to 31 December 2004, RCT-1's *ad hoc* counterfire cell in the FSCC tracked 6,098 radar acquisitions. Of those counterbattery acquisitions, 452 were confirmed as valid indirect fire attacks. During this time, the FSCC cleared M/4/14 and A/3-82 FA to fire 310 counterbattery fire missions for a total of 2,480 artillery rounds.

Artillery from M/4/14, RCT-1, 1st Marine Division, provides supporting and defensive fires for Camp Fallujah. (USMC Photo by LCpl Daniel J. Klein)

On 13 other occasions when the target could not be cleared for artillery fires, the FSCC used close air support (CAS) to engage enemy indirect fire assets. The FSCC also used unmanned aerial vehicles (UAVs) to deter enemy indirect fire, calling for fires with UAVs 14 times. These missions suppressed the enemy's indirect fire activities and prevented him from adjusting them onto multinational forces and the forward operating bases (FOBs) they occupied.

RCT-1 and 1st Mar Div employed standard fire support coordinating measures (FSCM), including no fire areas (NFAs), restricted fire areas (RFAs) and coordinated fire lines (CFLs).

The 1st Mar Div also developed a CFL box: four CFLs in a box shape. This non-doctrinal measure allowed surface-to-surface firing assets to engage targets in this box without further coordination. This enabled the division to fight the deep fight—deep being relative in an urban fight in a city that is approximately five kilometers wide and five kilometers deep.

The extremely crowded airspace in and around Fallujah was controlled using a non-doctrinal "keyhole" measure that simplified the deconfliction of fixed- and rotary-wing attack aircraft, UAVs and indirect fire. (A diagram of 1st Mar Div's Keyhole airspace coordination measure is shown in Figure 1.)

The keyhole construct assigned each regimental- or brigade-sized maneuver unit a holding area that allowed air officers to manage their assigned sections. The keyhole provided helicopters enough altitude for low-threat/high-altitude tactics (2,000 to 4,000 feet). Moreover, this arrangement allowed for the coordination of air assets between Fallujah and nearby Ramadi.

The most effective FSCM was the boundary when employed in the traditional manner with adjacent units working cross-boundary coordination. However, boundaries became a liability when units tried to buffer them with a row of buildings or city blocks. These buffer areas became seams the enemy could exploit.

Operation Al Fajr. During this operation, RCT-1's counterfire responsibilities extended to RCT-7, 2nd Brigade Combat Team (2nd BCT) (*Black Jack Brigade*) of the 1st Cav and I MEF Headquarters Group. In preparation for Operation Al Fajr, RCT-1 split the FSCC into two sections to execute fires supporting RCT-1's assault on Fallujah. The TPC and A/3-82 FA remained at Camp Fallujah about seven kilometers away from the city of Fallujah and conducted all counterfire missions within 30 kilometers of the camp. Meanwhile, M/4/14 provided DS fires to RCT-1 from Camp Fallujah, and C/1/12, also at Camp Fallujah, provided fires for RCT-7.

The FSCC conducted air and indirect fire coordination and all cross-boundary coordination for RCT-1, maintained constant battlefield awareness and monitored the positions of friendly maneuver units. To do this, all forces in that urban environment had to have a common understanding of the FSCM and boundaries used.

During the fighting in November and December 2004, the FSCC cleared 76 artillery call-for-fire (CFF) missions and 135 CAS missions against enemy forces in Fallujah, totaling 1,898 artillery rounds and 218,000 pounds of air-delivered ordnance. The FSCC safely coordinated and executed all artillery and air missions. The TPC section processed 3,300 acquisitions. 3-82 FA fired 172 of the acquisitions for a total of 1,280 rounds.

Counterfire Procedures Adapted. RCT-1's counterfire procedures differed from those of 4-27 FA, 1st Armored Division (1st AD), for its AO in Baghdad. (See the article "1st AD Hot Platoon in Iraq: POC to Brigade FSE Counterstrike Drill" by Sergeant First Class Robert M. Castillo in the May-June edition.)

Once the counterbattery radar had an acquisition, six nearly simultaneous actions took place (see Figure 2 on Page 26). RCT-1 received counterbattery radar acquisitions from the 2nd BCT, 1st Cav, and 1st AD radars as well as RCT-1's attached radars. The counterfire procedures were as follows.

- The FSCC immediately initiated a "Do Not Load" (DNL) mission with the artillery battery.
- The FSCC contacted the unit that owned the zone of the point of impact (POI) to confirm the acquisition. If the affected unit could not confirm the acquisition, the FSCC ended the fire mission. To facilitate confirmation of enemy indirect fire, artillerymen and non-artillerymen both learned the difference between the sounds of an attack by rocket-propelled grenades (RPGs), outgoing artillery, incoming indirect fire and other loud noises.

Crater analysis also helped develop counterfire data. (See the article "A Primer on Indirect Fire Crater Analysis in Iraq and Afghanistan" by Captain Edward J. Coleman and Sergeant First Class Rico R. Bussey in the July-August edition.)

- The air support liaison team (ASLT) began clearing the airspace. If the airspace could not be cleared, the FSCC ended the fire mission.
- The FSCC entered all pertinent information on Chat to provide rapid dissemination of the data: POI, point of

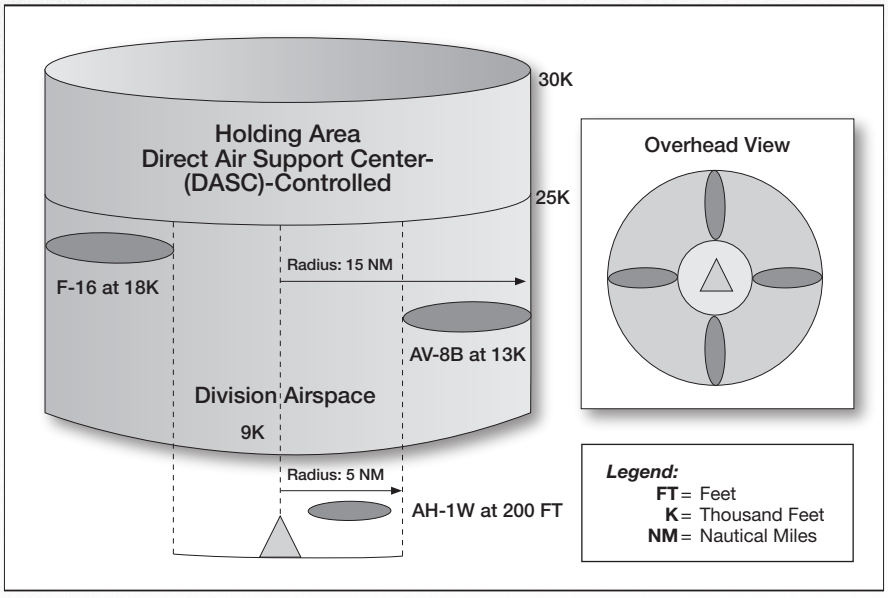


Figure 1: The 1st Marine Division's Keyhole Template for Airspace Control for Operational Fajr. The template shows the different possibilities for attacking the same target and one way to stack aircraft that are supporting the same target. The forward air controller (FAC) or joint terminal attack controller (JTAC) work the geometry of the situation to best support the mission, calling in aircraft from their respective holding areas and controlling them as appropriate in the terminal phase of the attack.

origin (POO), fire mission, etc.

• The FSCC plotted the POO on FalconView, depicting the gun target line (GTL) and a collateral damage ring that had a radius of the risk estimate distance (RED) associated with the weapon system at the given range. A designated representative of the RCT commander—normally the executive officer (XO), S2, S3, S3A or air officer—viewed the target area on FalconView and made the final collateral damage estimate (CDE).

The representative weighed several factors in determining the hasty CDE: number and type of buildings, buildings' positions along the GTL, time since the last acquisition, past acquisitions from the target area and proximity of main roads. Based on these factors, the representative either cleared or denied the mission.

• Once the mission was cleared and verified, the battery fired the mission. The fire order standard for a counterfire mission was a converged sheaf of seven high-explosive rounds with variable-time fuzes (HE VT) and one HE round with a point-detonating fuze (HE PD). The purpose of the one round of HE PD was to create a crater to help friendly forces find the impacts.

• When possible, the RCT conducted a battle damage assessment (BDA). On occasion, the RCT sent the countermortar exploitation team (CMET) to conduct BDA. The CMET was task-organized from the artillery battery personnel. At other times, the RCT vectored a ground patrol, UAV, or fixed- or rotary-wing aircraft to conduct BDA.

Targeting in a Counterinsurgency. Every target package required a storyboard to justify the target as well as a CDE. Storyboards were Powerpoint narratives that described enemy activity on the target and the rationale for striking it. RCT-1 developed storyboards using all available intelligence sources. While the target package concept was sound, at times it was overly restrictive.

A key lesson learned for targeteers and decision makers is to put collateral damage in perspective. For instance, if a target lies in the midst of an enemy-controlled city block, then collateral damage to surrounding buildings should not lead a decision maker to deny that particular target. Other factors, such as the information operations (IO) impact, may cause decision makers to deny a target.

The IO environment during OIF II increased the sensitivity and scrutiny of targeting at the tactical level. Higher headquarters reviewed all preplanned targets to ensure their IO effects would not exceed the perceived IO threshold.

Brigadier General Richard P. Formica, former Commander of the MultiNational Corps, Iraq (MNC-I) Joint Fires and Effects Cell (JFEC), explains what the IO threshold is on Pages 11 and 12 of his interview "Part II: Joint Effects for the MNC-I in OIF II" in the July-August edition. As a result, staying below the IO threshold restricted RCT-1's ability to conduct more aggressive shaping operations.

Throughout Operation Al Fajr, Battery

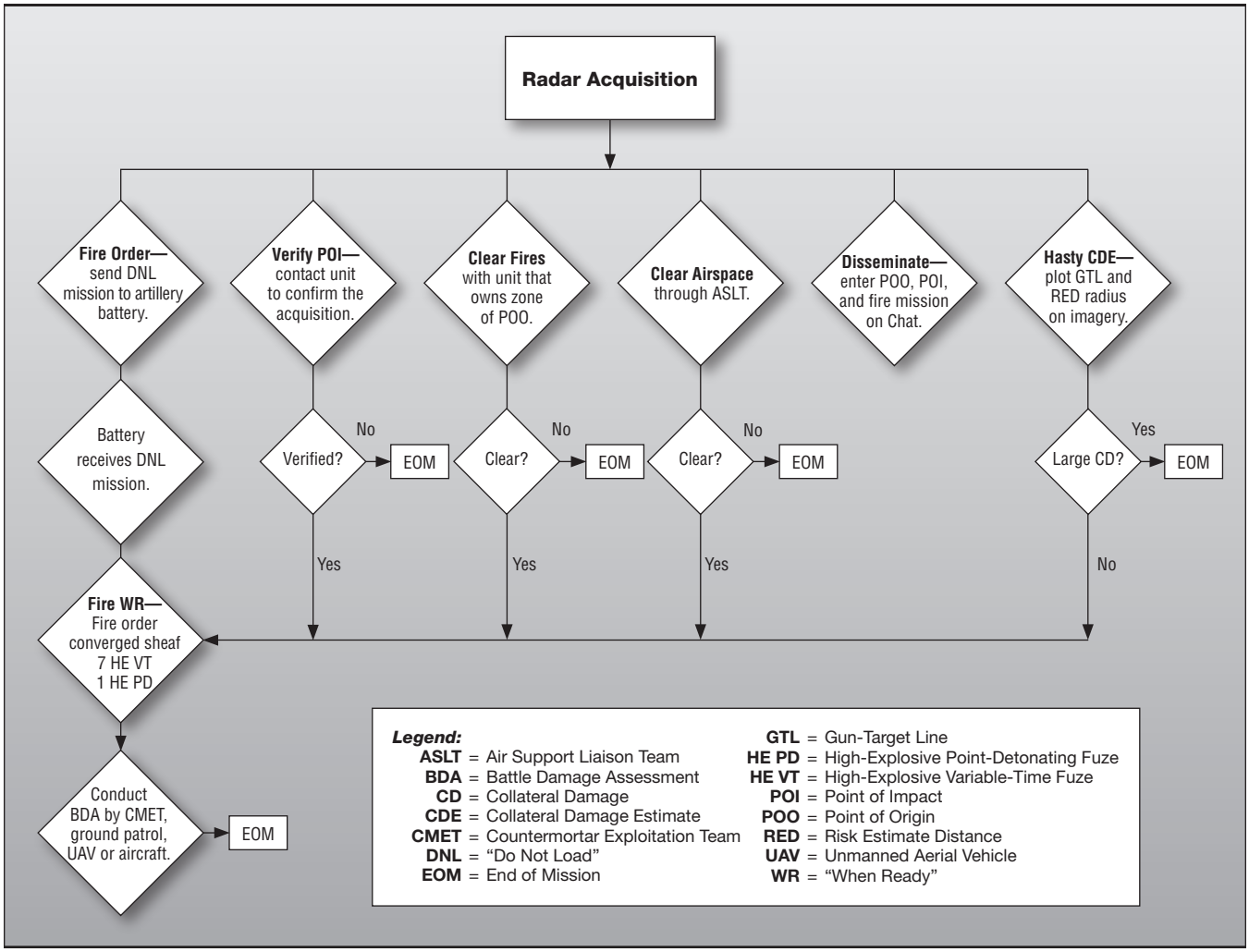


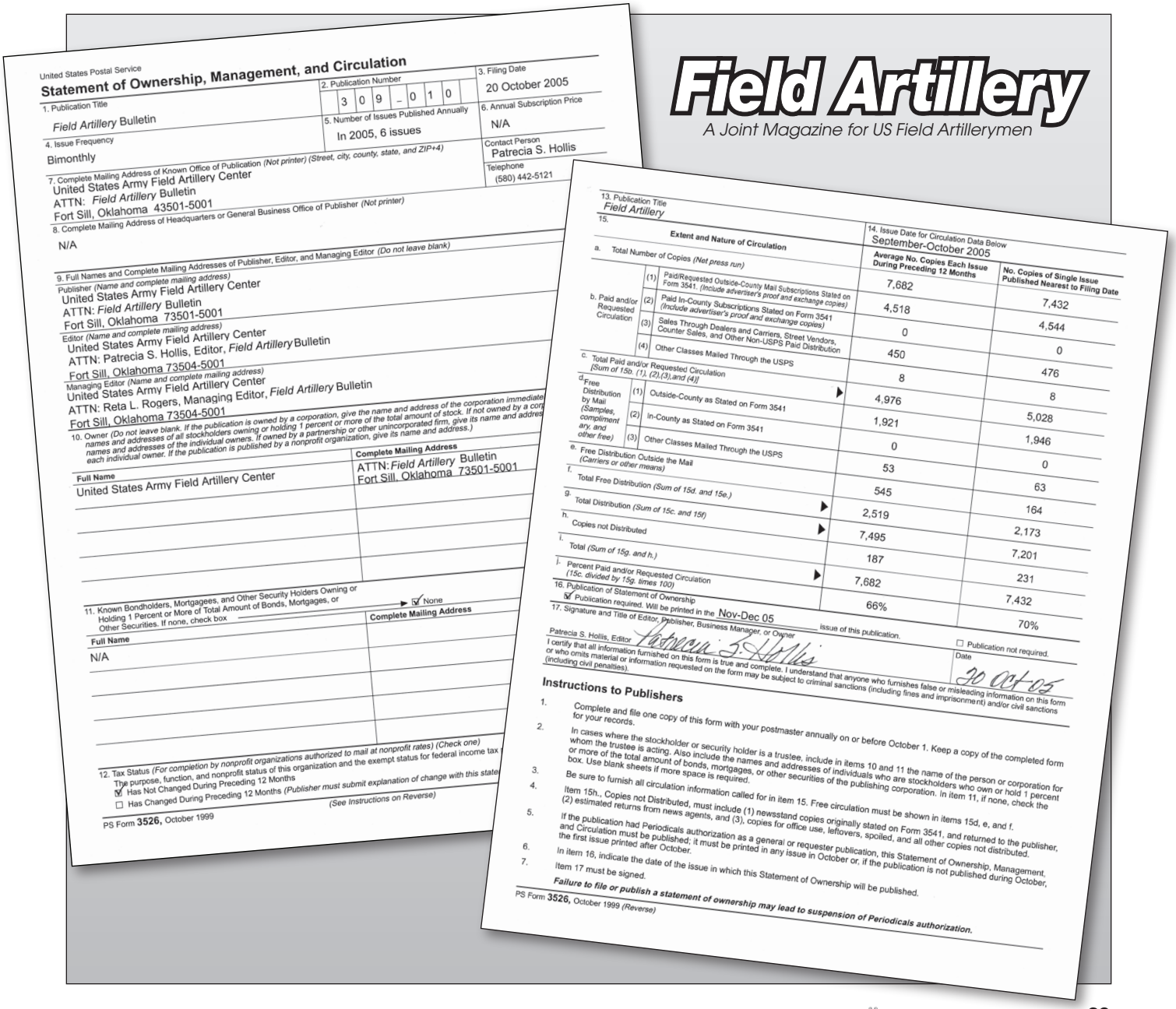
Figure 2: Regimental Combat Team-1's (RCT-1's) Counterfire Procedures for Operation Al Fajr in Fallujah, Iraq

M stood ready with six howitzers 24 hours a day, providing RCT-1 continuous fire support. More than 50 percent of the missions were fired danger close to friendly forces maneuvering in and around the city while in contact with the enemy.

In short order, the Marines, Sailors and Soldiers of RCT-1 learned that artillery- and air-delivered fires were accurate enough to engage enemy-held buildings with acceptable risk to friendly forces. Forward observers (FOs) (some by military occupational specialty, many others not), forward air controllers (FACs) and joint terminal attack controllers (JTACs) quickly learned to use buildings, up-armored high-mobility multipurpose wheeled vehicles (HMMWVs), amphibious assault vehicles and other means to mitigate the effects of danger close fires on friendly forces. Unit leaders learned to use FSCM effectively.

My "take away" is that our fire support principles work. Our doctrine is sound. What we need to do is increase professional discourse in our military education, after-action reviews (AARs), the schoolhouse, this magazine and in "the club" after work. These discussions must focus on how units have tailored fire support principles for the changing battlespace and made them work very well.

Lieutenant Colonel Keil R. Gentry, USMC, was the Executive Officer of Regimental Combat Team-1, 1st Marine Division, during Operation Iraqi Freedom (OIF) II-2, including for Operation Al Fajr in Fallujah. In OIF II-1, he was the Fire Support Coordinator (FSCOORD) and Information Operations (IO) Officer for the 1st Marine Division. During OIF, he was the S4 for the 11th Marine Regiment. Currently, he is the Commanding Officer of the 2nd Battalion, 11th Marines (2/11), Camp Pendleton, California, the same battalion in which he had served as Executive Officer. He also commanded T/5/10 at Camp Lejeune, North Carolina. Among other billets, he was a Fire Support Officer (FSO) for three years in the Special Operations Command, Fort Bragg, North Carolina. He holds an MA in National Security Strategy Studies from the College of Naval Command and Staff, Newport, Rhode Island.



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Observations from the Wolf's Den

Training to be a Maneuver (and Fires) Task Force

By Lieutenant Colonel James L. Miller

After 18 months of stability and support operations (SASO) mission readiness exercises (MRE) at the National Training Center (NTC), Fort Irwin, California, I have observed several areas that Field Artillery battalions routinely struggle with. This is particularly true when FA units are given nonstandard maneuver missions making them responsible for their own areas of operations (AOs).

Although some would argue this is an improper use of FA battalions and units should stick to their proficiencies, the reality is they must be flexible and train for and perform the missions assigned. Units cannot be successful when they train core proficiencies in lieu of preparing for assigned missions. After all, this is the heart of the mission-essential task list (METL)-based training doctrine: units train for the missions they have—not the missions they wish they had.

This article focuses on the mission Field Artillery battalions have during brigade-level SASO MREs at the NTC and the areas they can improve upon.

Background. During the last 18 months and in all 12 NTC training rotations, FA battalions have served as maneuver task forces with some counterfire and (or) fire support capability. They owned their own battlespace or AO and conducted missions traditionally performed by maneuver units. Often they were task-organized with maneuver companies or platoons under them, but at least one firing battery transitioned to a motorized maneuver force and at least one FA platoon remained focused on delivering indirect fires. The versatility demands of these missions are difficult for even the most talented units.

At these NTC rotations, I've seen several negative trends that units can correct at home station to enhance the NTC training experience and, ultimately, their combat readiness. The solutions presented in this article are based on doctrine and the recent combat experiences of many of our observer/controllers (O/Cs).

Home Station Training. The answer to increased combat potential is simple: mission-focused training with emphasis on reversing the negative trends will ensure preparedness for the NTC rotation and combat.

• *FA battalions arrive at the NTC for a SASO MRE having done little or no training for their mission as a maneuver unit.* Rather than a true MRE, many battalions train on SASO for the first time at the NTC. Often, the unit commander relates how well his gunnery training went but that he has had no time to do specific SASO tasks, such as react-to-contact drills, urban operations, room clearing, traffic control point (TCP) operations or detainee operations.

• *Units have not adjusted their METL to reflect their newly assigned mission.* This is either because it didn't seem necessary or they received guidance from their chain of command to leave it as is. This probably

Soldiers work through a stability and support operations (SASO) mission readiness exercise (MRE) at the National Training Center (NTC), Fort Irwin, California.

accounts for the limited SASO-specific training that units conduct before they arrive here; they've remained focused on a METL that does not support their upcoming mission.

The solution to this trend is to allocate enough time and resources to conduct SASO-specific training before deploying to the NTC. This also may result in a METL change. In many cases, training is not an either/or proposition and can be conducted as part of other training or even during mission support phases of the training cycle.

Because units live and work everyday in an urban environment, they easily can train specific urban combat techniques, such as room clearing and search procedures. They don't need a high-demand training resource, such as a military operations in urban terrain (MOUT) site. A "four-man stack" gets the same training entering a barracks room or motor pool bay as they would in a MOUT building, and the training can be conducted repeatedly at the section level with little or no coordination.

Training for TCPs has many of the same opportunities in our daily garrison operations. A unit tasked to perform gate guard should establish a to-standard combat TCP at the gate and use daily garrison traffic as its training aid. Other options for TCP training are available as well at motor pools and at range entry points.

React-to-contact drills (including improvised explosive device, or IED, drills) should be practiced daily and can be conducted as part of any movement, whether mounted or dismounted.

Focus and imagination are the keys here; units must be focused on the training required and use imagination to get as many correct repetitions of the training completed in a time- and resource-constrained environment.

Failure to train at home station means limited success at the NTC and, eventually, in combat.

• *FA battalions arrive here with limited experience conducting the entire military decision-making process (MDMP), which they will have to do as maneuver units.* Most FA battalions have never conducted MDMP with the staff they bring to the NTC. Sometimes this is the result of recent personnel changes, but more often it is because they've never found the time to do a full up MDMP or even train the decision-making process.

The real issue is that to be successful in a SASO steady-state environment, units must be able to continually perform a variation of the MDMP, revolving around the Army's targeting methodology, and be able to conduct a running estimate.

Without experience in MDMP, units struggle the entire rotation with slow and time-intensive decision making and routinely rob subordinates of time for mission preparation. As a result, platoons find themselves jumping from one task to another without adequate pre-combat checks or inspections and no time to conduct their own troop-leading tasks. This often leads to mission failure, even when success was easily within reach.

Again the answer is simple: units must exercise the MDMP at home station often. Every event, requirement or task is a golden opportunity to practice. Every new staff officer who arrives should trigger an MDMP training event as part of certification in that position and as a certification that the staff is still combat ready.

Commanders should use this time to practice issuing commander's planning guidance and commander's intent and drive a mission preparation process that forces the same troop-leading steps to occur down to the platoon and section levels. Every event, task or requirement is the perfect time to practice the MDMP, whether it is planning a sports day or conducting red cycle and (or) post support. Only with this practice can units be successful in continual operations in the steady-state environment found at the NTC or in combat.

• *When assigned a maneuver mission, FA battalions do not plan for or use fire support.* This is a great irony. FA battalions are supposed to be experts in fire support, and the NTC expects them to believe in the value and effectiveness of fires. However, in 12 SASO rotations, I have seen just four targets planned in support of an uncountable number of maneuver operations conducted by FA battalions. Those targets did not have a purpose, observer plan, communications plan or trigger developed for them and were never rehearsed or refined. No fire plan or essential fire support tasks (EFSTs) were developed other than those for counterfire/counterstrike.

Part of the problem is these maneuver (FA) battalions do not have their own fire support elements (FSEs). Without an FSE, the unit does not adequately focus on the critical fires required to support its operations. These fires include traditional lethal effects, such as close air support (CAS), and nonlethal fires and effects as well. The result is no integration of lethal and nonlethal fires in operations that often result in increased casualties, ineffective nonlethal operations and information fratricide.

The solution is one that FA battalions usually move to during their rotations. The battalion fire direction officer (FDO) becomes the battalion fire support officer (FSO) and his section morphs into an FSE. Because the amount and complexity of fires being delivered in a SASO environment rarely are enough to challenge the battalion fire direction center (FDC), the new FSE has the time and equipment to perform the role of the FSE and fires and effects cell (FEC) as well. Well trained FDCs find these duties within their capabilities, even in the most demanding SASO fires environment.

The FDO as an FSO gives the FA battalion the capability to integrate lethal and nonlethal fires in support of operations and is the key staff officer who ensures that integration is ongoing and complete for every operation. When lethal fires are needed, the battalion plans, rehearses and resources them. The most successful operations are the ones in which lethal and nonlethal effects are integrated fully.

• *Units are not prepared to perform as the force FA headquarters (FFA HQ) for their brigades.* The traditional direct support (DS) battalion has no problem performing the missions and responsibilities assigned to an FFA HQ. However, given the rise of the brigade FEC and the assignment of FA battalions into maneuver roles, this has changed.

FA battalions normally arrive at the NTC for a SASO rotation with the mission to provide just one firing battery and the remainder of the battalion as a motorized maneuver formation. In the firing battery, just one platoon is kept in a Hot or firing status during the rotation.

The battalion's focus naturally and quickly shifts to maneuver in lieu of fires in this construct. As a result, counterfire/counterstrike operations suffer and the effectiveness of the lethal fire support system begins to wane as well.

The first issue we see in this area during SASO rotations is that the counterfire/counterstrike system for the brigade is never fully developed, focused or rehearsed without a dedicated FFA HQ. If this mission is assigned to the FEC, it normally is already too busy and does not have the experience, assets or staff to provide the focus and direction necessary for the brigade to be successful.

Although the FEC can and should be part of the solution, there is no substitute for the training, capabilities and expertise

found in the FA battalion when it comes to taking the lead for combined arms operations focused on the counterfire/counterstrike fight.

The second issue with the FFA HQ is command and control of the firing element. Whether it's a Hot platoon or a full firing battery, FA battalions normally struggle with the proper command and support relationship of the firing unit. The firing unit usually is very confused about whom it works for, who assigns the azimuths of fire and missions, and to whom it answers calls for fire.

Additionally, it is often "a beggar" on the battlefield as no one has been formally assigned to provide it logistical support and supervision. This worsens when firing units are split between two or more forward operating bases (FOBs).

Finally, when the firing unit needs guidance, leadership and coaching, it often goes without due to the unclear relationship.

The FA battalion simply must remain the FFA HQ for the brigade to resolve these issues. Although performing as a maneuver unit, the FA battalion still supports the brigade with fires and the FFA mission and fulfills the responsibilities inherent in those roles.

Finally, the FA battalion is still responsible for the lethal counterfire/counterstrike reaction and acts as an advisor to the brigade in the proactive combined arms counterfire/counterstrike fight. Units must remember that the addition of maneuver missions to their METLs does not relieve them of the traditional responsibilities of an FFA HQ battalion.

• *While most FA battalions are very good at fire support coordination measures for indirect fires, they do not have the experience or expertise to conduct proper direct fire control measures and fratricide avoidance.* When artillerymen perform traditional maneuver missions at the NTC, there is a trend of repeated fratricides, both to the coalition forces and civilians, caused by the lack of direct fire control measures and planning.

In an average town in any country there is very little that will stop a .50 caliber round, and the same is true of NTC towns. Given the compartmentalized nature of urban operations, fratricide is a relatively common occurrence at the NTC, even with weapons smaller than .50 caliber. The most common fratricide results from shooting into a room already occupied by US forces followed closely by a crew-

Principles of Direct Fire Control

- Mass the effects of fire (focus and distribute).
- Destroy the greatest threat first.
- Avoid target overkill (distribution).
- Employ the best weapon for the target.
- Minimize friendly exposure.
- Prevent fratricide.
- Plan for extreme limited-visibility conditions.
- Develop contingencies for diminished capabilities.

Direct Fire Control Measures: Terrain-Based vs. Threat-Based

Terrain
- Target Reference Point (TRP)
- Engagement Area (EA)
- Sector of Fire
- Direction of Fire
- Terrain-Based Quadrant
- Friendly-Based Quadrant
- Maximum Engagement Line (MEL)
- Restrictive Fire Line (RFL)
- Final Protective Line (FPL)

Threat
- Fire Patterns
- Target Array
- Engagement Priorities
- Weapons Ready Posture
- Trigger
- Weapons Control Status
- Rules of Engagement (ROE)
- Weapons Safety Posture
- Engagement Techniques

Direct Fire Planning Considerations

- How does the fire plan help achieve success at the decisive point?
- What is the mission and the desired effect of the fires?
- Is the fire plan consistent with the ROE?
- Where are combat vehicles or other dangerous weapons systems?
- Which course of action (COA) has the enemy selected?
- Where are we going to kill or suppress the enemy?
- From where will we engage him?
- Which enemy weapons do we want to engage first?
- How will we initiate fires with each weapons system?
- What is the desired effect of fires from each unit in the support element?
- How will we distribute the fires of platoons to engage the enemy three dimensionally?
- Will we be able to see and understand the control measures?
- How will we mass fires to deal with multiple enemy threats and achieve the desired volume of fires?
- Where will leaders be positioned to control fires? How will we focus fires on new targets?
- How will we deal with likely enemy reactions to our fires?
- Does the plan avoid overkill, use each weapons system in its best role, concentrate on combat vehicles, take the best shots, expose only those friendly weapons needed and destroy the most dangerous targets first?
- Will the fires be masked by buildings or assault element movement?
- Have we taken into account that direct fire control measures are key to communications in urban operations, allowing subordinates to have a common operating picture (COP) and communicate more efficiently?
- Are the direct fire control measures planned before an assault and understood by all subordinates?

Figure 1: Direct Fire Control Measure Planning. FA battalions must understand direct fire control principles and the differences between terrain-based and threat-based fire control measures plus consider all aspects of direct fire planning. Direct fire control measures help the leader on the ground focus the fires of his mounted and dismounted elements on the enemy and away from friendly forces. These measures should be planned throughout the unit's area of operations (AO) and areas of interest. If the measures are planned by an adjacent unit in an area of interest, the two units coordinate to ensure they use common control measures. For more detailed information and tactics, techniques and procedures (TTPs) for direct fire control measures, see *Field Manual 3-06.11 Combined Arms Operations in Urban Terrain,* Chapter 4.

served weapon firing from a vehicle on the cordon into town with "friendlies" in the line of fire (either visible or not to the shooter).

Urban operations must be precise, deliberate and detailed. This ensures success by eliminating unintentional death or injury to friendly and coalition forces and civilians. Absolutely critical to success when fighting an insurgency is to harm only the insurgents and minimize collateral damage that would become the key and constant centerpiece of the enemy's information campaign.

FA battalions must train direct fire control down to the Soldier level; all are responsible for the control of fires. Not only must every Soldier understand the rules of engagement (ROE) as part of this requirement, but he also must understand the difference between threat-based and terrain-based direct fire control measures, know the principles of direct fire control and use the direct fire planning considerations while planning maneuver operations at all levels. (See Figure 1.) Planning must be precise, deliberate and detailed in execution to win in the SASO environment.

Field Manual (FM) 3-06.11 Combined Arms Operations in Urban Terrain Chapter 4, "Offensive Operations," is a good starting point for direct fire control planning in urban operations. All units performing maneuver missions should learn the measures outlined in the FM in detail.

• *FA battalions routinely come to the NTC without a system to handle the daily crisis of limited resources and unlimited requirements for Soldiers and units.* The NTC replicates a SASO environment that is not very different from what units deployed to combat zones experience everyday. This includes the enormous friction between the multiple simultaneous missions and taskings and the limited resources available to perform those missions and taskings. As a result, managing troops-to-tasks is very challenging and something every FA battalion struggles with during its NTC rotation. The problem is easy to define: there are simply too many priority requirements for subordinates to execute in any given day.

The default method for solving this problem has been for the battalion to simply push multiple missions down to the batteries without establishing priorities and demand that all tasks be accomplished to standard. This results in platoons with inadequate time to plan, prepare and execute their missions and the platoons' failure to achieve anything substantial. An old Army adage says, "He who defends everything, defends nothing." At the NTC we could say, "He who attempts to do everything, does nothing."

I am not advocating general disobedience of mission orders to solve this issue. Rather, solving this problem requires some serious management and good basic leadership.

The S3 shops of FA battalions have systems to manage those times in garrison where whole battalions routinely engage in mission support tasks. These systems are a great place to start tracking assigned missions against available troops and units and should be included in running estimates and (or) mission analysis processes in SASO. These processes give a clear picture of the troops available and assigned missions and allow leaders to make decisions about upcoming requirements and who is available to perform them. (See Figure 2 on Page 36 for a simplistic example of a troop-to-task tracking chart.)

At the battalion level, leaders should track individual units down to the section level, and the entry for every mission should depict the number of sections required and the time it will take those units to plan, prepare, execute and recover from that mission to standard. During that time, no other missions should be assigned to those sections.

Units should assign missions to batteries at the battalion level but track their execution at the section level. However, leaders must not let this system become a tool to micromanage. Battery commanders and first sergeants keep the battalion informed of how they are meeting their missions—not the other way around.

Besides giving a clear picture of what they are doing on any given day, the troop-to-task tracking chart allows the unit to know when it has more than it can handle. At some point, leaders must step in and prioritize the missions, so the staff can delay execution of some missions to meet the commander's intent and accomplish all to standard.

For example, if the battalion is completely tasked in a SASO environment and receives an additional mission from brigade, leaders must be able to quickly understand the priorities and make a decision at the lowest level possible on which mission will be delayed to accomplish the brigade's mission immediately.

Finally, a clear troop-to-task tracking chart provides the documentation needed on those rare occasions when units must go back to brigade to get relief from tasks. Showing the brigade staff what the battalion is doing often causes the staff or commander to give the battalion some relief from missions. After all, the brigade must manage troops-to-tasks as well.

• *FA battalions routinely come to the NTC and begin their reception, staging, onward movement and integration (RSOI) week without a well developed plan to execute the RSOI phase.* I'd like to believe this final trend is only an NTC-ism. However, having deployed repeatedly and seen many others deploy, I know this final trend is something all can improve upon.

There are a myriad of missions, training and logistical events and tasks during RSOI that all must be accomplished to support the purpose of RSOI: producing a combat effective FA battalion. RSOI is a tactical mission with heavy logistical implications. Without a well developed and rehearsed RSOI plan, FA battalions will struggle throughout RSOI at the NTC, just with reception and staging.

The battalions routinely miss suspenses on tactical requirements in support of the brigade's operations, such as calibration, force protection missions and ammunition draw, and never have time to focus on onward movement and integration. Sometimes units fail completely in integration for several days after the RSOI days have passed. The bottom line is if a unit comes to the NTC without an RSOI plan, it won't catch up until the rotation is finished.

We routinely see staffs "smoked" by RSOI, staffs that then are too exhausted to be effective during the initial training days. As a result, these staffs give the enemy the upper hand as they occupy their AOs, usually with painful results.

A simple investment in planning for RSOI before deploying actually "kills two birds with one stone." Not only will the unit be more successful during RSOI, it also will have another golden opportunity to practice and train MDMP skills as a battalion staff.

In closing, it's important to remember that any FA battalion will struggle with any number of things as it prepares, trains and deploys to the NTC. With the change in focus for many Field Artillery battalions to performing additional maneuver missions, the normal rotational struggles are multiplied exponentially. The key to reversing the negative trends outlined in this article is for units to recognize the trends, prioritize them and develop a plan to overcome them.

Then these units can come to the NTC for integrated practice and polish. Good

	1-Jun	2-Jun	3-Jun
A/2-608 FA	Stability Operations	Stability Operations	Stability Operations
1/A/2-608 FA			
1/1/A/2-608 FA	Hot Gun	Snap Checkpoint	Hot Gun
2/1/A/2-608 FA	Hot Gun	Snap Checkpoint	Recovery
3/1/A/2-608 FA	Recovery	Route Recon MSR Bull Run	Hot Gun
2/A/2-608 FA			
1/2/A/2-608 FA	FOB Security	Hot Gun	Snap Checkpoint
2/2/A/2-608 FA	FOB Security	Hot Gun	Snap Checkpoint
3/2/A/2-608 FA	FOB Security	Recovery	Route Recon MSR Bull Run
B/2-608 FA	Stability Operations	Stability Operations	Stability Operations
1/B/2-608 FA			
1/1/B/2-608 FA	Security Patrol Medina Wasl	Police Training Medina Wasl	Security Patrol Medina Wasl
2/1/B/2-608 FA	Security Patrol Medina Wasl	Police Training Medina Wasl	Security Patrol Medina Wasl
3/1/B/2-608 FA	Security Patrol Medina Wasl	Recovery	Security Patrol Medina Wasl
2/B/2-608 FA			
1/2/B/2-608 FA	Recovery	Security Patrol Medina Wasl	AO Security Patrol
2/2/B/2-608 FA	Police Training Medina Wasl	Security Patrol Medina Wasl	Police Training Medina Wasl
3/2/B/2-608 FA	Police Training Medina Wasl	Security Patrol Medina Wasl	Police Training Medina Wasl
C/2-608 FA	Stability Operations	Stability Operations	Stability Operations
1/C/2-608 FA			
1/1/C/2-608 FA	QRF 1	FOB Security	Joint Training with the ING
2/1/C/2-608 FA	QRF 2	FOB Security	Countermortar Patrol
3/1/C/2-608 FA	QRF 3	FOB Security	Countermortar Patrol
2/C/2-608 FA			
1/2/C/2-608 FA	Recovery	QRF 1	FOB Security
2/2/C/2-608 FA	Recovery	QRF 2	FOB Security
3/2/C/2-608 FA	Recovery	QRF 3	FOB Security
HHB/2-608 FA	Stability Operations	Stability Operations	Stability Operations
1st Squad	Countermortar Patrol	Recovery	QRF 1
2d Squad	Countermortar Patrol	Countermortar Patrol	QRF 2
3d Squad	AO Security Patrol	Countermortar Patrol	QRF 3
RSTA Platoon	Countermortar Operations	Countermortar Operations	Countermortar Operations
Svc/2-608 FA	Stability Operations	Stability Operations	Stability Operations
1st Squad	Snap Checkpoint	Recovery	Countermortar Patrol
2d Squad	Snap Checkpoint	Recovery	Countermortar Patrol
3d Squad	Route Recon MSR Bull Run	AO Security Patrol	Recovery

Legend:
FOB = Forward Operating Base
HHB = Headquarters and Headquarters Battery
ING = Iraqi National Guard
MSR = Main Supply Route
QRF = Quick-Reaction Force
RSTA = Reconnaissance, Surveillance and Target Acquisition
Svc = Service Battery

= Priority Mission
= Important Mission
= In Recovery
= Available

Figure 2: Example of a Troops-to-Tasks Tracking Chart. Although this is a simplistic example, this matrix allows the commander to see clearly what elements have what missions and which ones are available for new missions.

units get better everyday at the NTC. *Train the Force!*

Lieutenant Colonel James L. Miller is the Senior Fire Supporter (Wolf 07) at the National Training Center (NTC), Fort Irwin, California. In his previous assignment, he commanded 1st Battalion, 15th Field Artillery (1-15 FA), part of the 2nd Infantry Division in Korea. Also while in Korea, he served as the Chief of Fire Support for the Combined Forces Command (CFC). In the 3rd Infantry Division at Fort Stewart, Georgia, he was the Chief of Plans and Exercises in the G3 and Battalion Executive Officer and Brigade Fire Support Officer while assigned to 1-10 FA. He commanded the 1st Howitzer Battery, 11th Armored Cavalry Regiment, in the Gulf for Operation Positive Force, a follow-on to Operation Desert Storm. He holds an MA in International Affairs from Catholic University of America in Washington, DC, and a Master of Military Arts and Sciences from the Command and General Staff College (CGSC) at Fort Leavenworth, Kansas.

"Down and Dirty"

Training an FA Bn to be a TF in Iraq

The following is an email from Lieutenant Colonel Robert H. Risberg, Commander of 1st Battalion, 10th Field Artillery, 3rd Infantry Division, commanding Task Force 1-10, a maneuver and fires TF in Baqubah during Operation Iraqi Freedom (OIF) III. The email was in response to a request for information on how to prepare FA battalions for deployment to Iraq in OIF IV. This email is his "down and dirty" reply, which is published with his permission. Editor

Task Force 1-10 is a maneuver and fires task force. As a maneuver TF, we own a piece of ground and perform all of the combat, intelligence, surveillance and reconnaissance (ISR), security and information operations (IO) missions and civil-military operations (CMO) that maneuver TFs perform. We do this with one FA battery organized into three platoons of motorized infantry (with an attached tank platoon), one mechanized infantry company and one engineer company pulling fixed-site security plus our headquarters and headquarters battery (HHB) and forward support battery (FSB), which is our old service battery that is now our forward support company under the unit of action reorganization.

As a fires TF, we have one firing platoon in position ready to fire with one gun Hot and running all the time to respond to counterfire and troops-in-contact missions. We also employ a Q-37 radar.

We created an IO, CMO/S5 and fire support element (FSE) staff "out of hide," but the brigade combat team (BCT) gave us an engineer planner and an infantry officer to be our plans officer. We deployed with our organic survey from the improved position and azimuth determining system (IPADS), meteorological (Met) from the Profiler and meteorological measuring set (MMS), and a fire direction center (FDC) with the advanced FA tactical data system (AFATDS).

We've conducted two FA raids in the seven months of OIF III, so firing units rarely move and survey operations are not of much concern. We have good survey data on the forward operating base (FOB).

We do standard Met updates using the Profiler and USAF weather data from secure internet protocol routing network (SIPRNET) and push it to other TFs to use with their mortars. Because we needed to man all the nonstandard staff positions, we took the personnel out of the platoon operations centers (POCs) and the guns work directly for the battalion FDC.

Our other firing battery is task organized under one of the other TFs in our BCT. This battery not only employs its guns as we do, but also owns a piece of ground and performs IO, CMO and security missions. The battery has the TF mortar platoon task organized under it and runs a joint FA/mortar FDC. Under the supervision of the appropriate section chiefs, artillerymen and mortarmen have been cross-trained to fire both the 120-mm mortars and M109A6 howitzers.

We shoot FA fires daily, usually a terrain denial schedule of fires for one of our companies or another TF in the BCT's area of responsibility (AOR). We shoot counterfire under the BCT FSE's control every week or so and in support of troops-in-contact about once a month.

I would concentrate on these tasks in pre-deployment training. Here are other important areas to train.

React-to-Contact Battle Drills. Whether the contact is an improvised explosive device (IED) strike, a suicide vehicle-borne IED (VBIED) or direct fire, every squad/crew must know immediately what to do. The particular tactics, techniques and procedures (TTPs) vary, depending on your equipment and where you are operating, but the TTPs must be automatic.

Rules of Engagement (ROE)/Escalation of Force. Soldiers must understand the ROE and how and when to increase levels of force. While we underwrite our Soldiers' right to self-defense, more ROE emphasis before deploying may ease potential issues in theater.

Traffic Control Point (TCP) Operations. It is not easy to establish and run an effective TCP that keeps your Soldiers as safe as possible while accomplishing the mission. You need good battle drills for setting up and running the operations. All squads and (or) crews must have wire and cones to shape the area and provide both a warning to civilians and the engagement line to employ force.

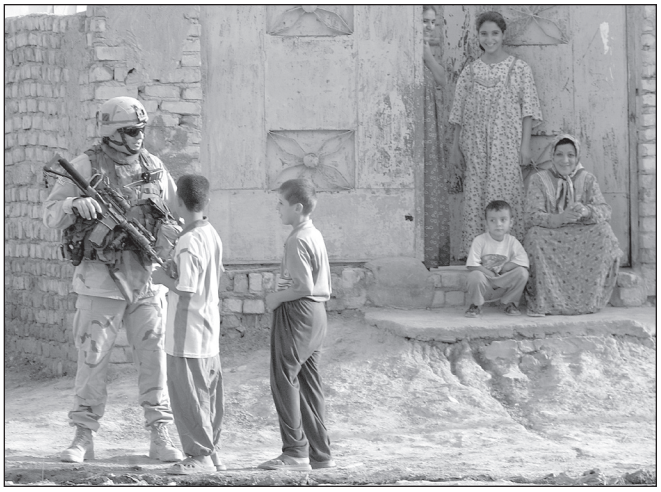
Language Training. We did this near the end of pre-deployment training, but it should have started sooner and had more emphasis. You should find ways to incorporate Arabic (and the Iraqi dialect of Arabic) into all training early on. It will save time, effort and, potentially, lives.

Sphere of Influence (SOI) Engagement. Junior leaders and, sometimes, junior Soldiers will interact daily with Iraqis. Most of our young Soldiers have not trained for this. It is an art to be able to get your point across, maintain the talking points line and not get frustrated. It is also important to know and respect local customs.

This information should be of some help. The mission here is tough, but our Artillerymen are flexible and can handle anything thrown at them.

Tell your Soldiers to trust their instincts and think through the unfamiliar missions, and they will be successful.

LTC Robert H. Risberg,
Commander, 1-10 FA, 3d ID, Iraq



A Task Force 1-10 Soldier interacts with local Iraqi children.

FA Battery Trends in Stability and Support Operations

Simultaneous Maneuver and Fires Missions

By Major Jerome S. Morrison II

At the National Training Center (NTC), Fort Irwin, California, many firing batteries train in stability and support operations (SASO) as they prepare to deploy in support of Operation Iraqi Freedom (OIF) and other operations in the war on terrorism. The NTC training scenarios and complex environment are designed to challenge the units' leadership by replicating both vast open terrain and small towns.

The firing units that come to the NTC generally excel in providing fires in support of the maneuver commander yet find a set of unique challenges as they assume roles in support of SASO. Firing batteries often are asked simultaneously to maintain a firing capability, conduct fixed-site security, conduct counter-improvised explosive device (IED) operations and combat patrols, and perform civil-military operations (CMO).

The following are observations of the six issues that Field Artillery (FA) chains of command routinely struggle to accomplish when the units transition from a conventional fight into SASO in the contemporary operating environment (COE). The six are conducting troop-leading procedures in a time-constrained environment, establishing direct fire control and fratricide prevention, conducting casualty evacuation, managing

Soldiers work through a stability and support operations (SASO) mission readiness exercise (MRE) at the National Training Center (NTC), Fort Irwin, California.

and reporting troop-to-task, providing close support battery operations and visualizing actions beyond the actions on the objective.

1. Conducting Troop-Leading Procedures in a Time-Constrained Environment. One of the biggest hurdles that battery commanders face is managing their units' time. Battery commanders often struggle with initiating troop-leading procedures and wait until their battalion headquarters issue warning orders (WARNOs) or fragmentary orders (FRAGOs) before they begin planning. This leaves the batteries too little time to plan for and execute their missions.

The effective battery commander positions either himself or a liaison in the battalion tactical operations center (TOC) to conduct parallel planning while the battalion staff prepares a written FRAGO or WARNO. This allows the battery commander to complete his mission statement, his intent (including key tasks, purpose and end state) and a tentative timeline for the battery to follow. He uses the battalion's FRAGO or WARNO to confirm or deny the information in the battery's WARNO.

Once the battery commander receives the mission and issues the WARNO, the remaining steps in the troop-leading procedures tend to fall into a logical sequence. Often the commander struggles with completing the plan. He gets frustrated with what he perceives as a mission that changes until the moment of execution. He receives written orders from headquarters, begins his planning process and, before he can issue a WARNO to his subordinates, receives changes to the original mission. He then restarts his troop-leading procedures until the next change. This cycle continues until the commander runs out of time and either fails to issue battery orders or fails to give subordinates enough time to prepare for the missions.

Much of this problem stems from commanders who do not publish WARNOs immediately upon receipt of the missions. The commander can develop and issue essential FA tasks (EFATs), pre-combat checks (PCCs), pre-combat inspections (PCIs) and other information in a subsequent WARNO or the battery operations order (OPORD). An initial WARNO with mission, commander's intent and a timeline, is more than enough for the unit to begin moving toward accomplishing the mission.

The commander must be able to issue the plan and adjust it as he receives more information or the situation changes. Once initial timelines are issued, the commander continues to update and properly enforce them.

The commander must see troop-leading procedures as a continuous process in which he must revisit all steps instead of seeing each as a step-action drill that has a beginning and an end.

2. Establishing Direct Fire Control and Fratricide Prevention. Battery leaders struggle with establishing either planned or hasty direct fire control measures to support their maneuver plans.

Many of the missions that batteries are tasked to accomplish deal with converging friendly forces, passages-of-lines or units operating inside the direct fire sectors of adjacent sections or units. Each of these types of missions requires a detailed fire control method.

As outlined in *Field Manual (FM) 3-90.1 Tank and Mechanized Infantry Company Team*, a battery's direct fire planning process should identify probable enemy locations, determine the enemy scheme of maneuver, determine where and how to mass (focus and distribute) direct fire effects, orient forces to speed target acquisition and shift fires to refocus or redistribute the effects. See Figure 1 for the principles of direct fire planning.

While there are many methods of controlling and planning direct fire, these are generally defined as either terrain- or threat-based. See Figure 2 on Page 39 for the types of terrain-based fire control measures. Figure 3, also on Page 39, lists the threat-based direct fire control measures.

Even when the unit develops a good direct fire control plan, there is always the possibility that something will happen to change the plan. In this case, each Soldier in the unit must be assigned a default designated sector-of-fire and assume that sector-of-fire in the absence of further guidance. Section chiefs and platoon sergeants must continually update and verify these sectors. This is nothing more than a Soldier knowing that his default sector-of-fire is to cover from one o'clock to three o'clock until his squad leader or section chief ties his fire into adjacent units and the terrain around him. This battle drill may be difficult to perform at first, but once Soldiers practice it, it easy to grasp.

- Mass the effects of fire (focus and distribute).
- Destroy the greatest threat first.
- Avoid target overkill (distribution).
- Employ the best weapon for the target.
- Minimize friendly exposure.
- Prevent fratricide.
- Plan for extremely limited visibility conditions.
- Develop contingencies for diminished capabilities.

Figure 1: Principles of Direct Fire Planning

A Soldier deals with "civilians" during a SASO MRE at the NTC. In the SASO environment, units can be expected to fill several different roles.

Finally, each Soldier must be aware of the rules of engagement (ROE), be able to identify a target positively and understand the capabilities and limitations of his weapons system. Every Soldier must understand that the effects of his weapon extend beyond the target area.

3. Conducting Casualty Evacuation (CASEVAC). Batteries are familiar with establishing casualty collection points (CCPs) in linear battlefields where terrain often is more permissive and lines to the next higher level of care are well defined. However, units struggle with CASEVAC in complex urban terrain during SASO.

Commanders and first sergeants must be prepared to distribute combat lifesavers across their platoons and sections when operating in a SASO environment. The most critical steps to successful CASEVAC are securing the points of attack and rendering immediate aid to the casualty. Well distributed combat lifesavers allow individual sections or even fire teams to maneuver with the support of overwhelming firepower to render immediate aid to casualties.

Units must identify primary, alternate, tertiary and supplementary CCPs and CASEVAC vehicles. They must disseminate and rehearse locations and operations of each of these CCPs and, as the resources are transferred from one CCP to the next, announce the cancellation and establishment of subsequent CCPs and routes into and out of the CCPs. Subordinate units must receive the changes graphically. Also, commanders must ensure the nonstandard CASEVAC vehicle load plans are inspected so the vehicles are prepared to help in timely casualty evacuations.

4. Managing and Reporting Troop-to-Task. Batteries often find themselves simultaneously conducting patrols, maintaining several "hot" guns, participating in base or forward operating base (FOB) defense and conducting sustainment operations, such as maintenance and rest cycles. However, battery chains of command struggle with managing and reporting the impact of subsequent missions.

While units tend to surge at the NTC and perform missions for a greater duration than they could be capable of performing during sustained operations, the impact of overestimating available man-hours is evident almost immediately in the form of delayed movements, slow acquisition-to-fire times on counterbattery missions and a general efficiency

loss in the force.

Units must come prepared to manage and report troop-to-task requirements and understand their impact in a common format. Battalions should establish a common unit to measure tasks. This can be defined as a "section" with a section defined as "six personnel." The tasks also must be defined by time, such as B Battery will provide two howitzer sections ready-to-fire from 120001Jul until 142359Jul.

As tasks reach the batteries, the battery commanders and first sergeants must back brief the battalion staffs as to the tasks' impact on manning and other missions. For example, a battery commander may determine that for the duration of the mission, his sections can cycle through a 12-hour on/12-hour off cycle to meet the battalion's requirements without a degradation of the unit's ready-to-fire status. The battery commander reports to the battalion the mission will require the dedication of four sections for two days. This back brief enables the battalion staff to confirm or deny its facts and assumptions about the unit's capabilities and limitations and allow it to manage an equitable distribution of the missions.

Batteries then must plan and prioritize for contingencies. They must be prepared to continue the missions despite manpower losses due to casualties, emergency leave or additional taskings. They must identify which missions are most critical, and, subsequently, which missions and sections can continue with degradations of manpower or other resources. Batteries also must identify triggers for when to ask for relief from taskings or assistance in accomplishing particular missions, based on the common unit of measure and planned timelines.

5. Providing Close Support Battery Operations. In the SASO environment, units can be expected to fill several different roles. These roles may preclude FA battalions from providing fires to a brigade as a whole and require them to establish batteries or platoons as direct support (DS) to individual maneuver task forces. While in the close support battery role, the battery chain of command must be able to support the maneuver commander(s) as well as plan for the other required missions.

In this role, the battery should be prepared to send a liaison to the task force headquarters. The liaison can provide the maneuver staff the battery's personnel and equipment capabilities and logistics and support requirements. The liaison can help the task force fire support element (FSE) and staff with the military decision-making process (MDMP). He also facilitates the timely execution of troop-leading procedures for the battery's chain of command by providing insight into the task force's missions and timelines.

- Target Reference Point (TRP)
- Engagement Area (EA)
- Sector-of-Fire
- Direction of Fire
- Terrain-Based Quadrant
- Friendly-Based Quadrant
- Maximum Engagement Line (MEL)
- Restrictive Fire Line (RFL)
- Final Protective Line (FPL)

Figure 2: In terrain-based direct fire control, leaders develop or establish one or more of these measures.

- Fire Patterns
- Target Array
- Engagement Priorities
- Weapons Ready Posture
- Trigger
- Weapons Control Status
- Rules of Engagement (ROE)
- Weapons Safety Posture
- Engagement Techniques

Figure 3: In threat-based direct fire control, leaders develop or establish one or more of these measures.

The battery develops standing operating procedures (SOP) that include checklists of tasks to accomplish and assign personnel responsibility for accomplishing them once the close support mission is issued. Example: The fire direction officer (FDO) might be responsible for maintaining communications security (COMSEC) and graphics and establishing Army battle command system (ABCS) conductivity. The first sergeant may be responsible for maintenance data from the unit level logistics system-ground (ULLS-G); petroleum, oil and lubricant (POL) requirements; the CASEVAC plan; and Class I requests.

Finally, the battery commander must be prepared to assume the role of effects coordinator (ECOORD) for the task force. The battery commander is the one who best can speak to what the unit can and cannot provide the maneuver commander, in terms of fires. He also helps the task force's FSE maximize and share assets, such as survey, radar coverage and meteorological, if available.

6. Visualizing Actions Beyond the Actions on the Objective. Some battery commanders struggle to visualize what actions to take beyond the actions on the objective. They often will look at consolidation and reorganization as an end of a mission (EOM) instead of preparation for follow-on missions. Two points can help to provide focus.

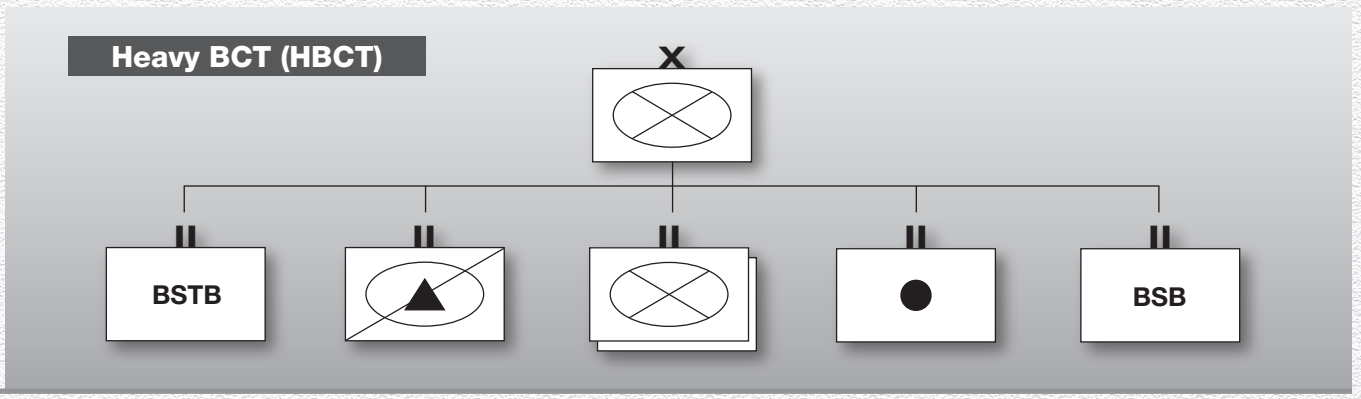
First, the battery commander must think about the unit's end state as listed in the battalion commander's intent. This end state should be quantifiable as well as provide direction and insight into what the next mission is or what the commander anticipates the next mission may be.

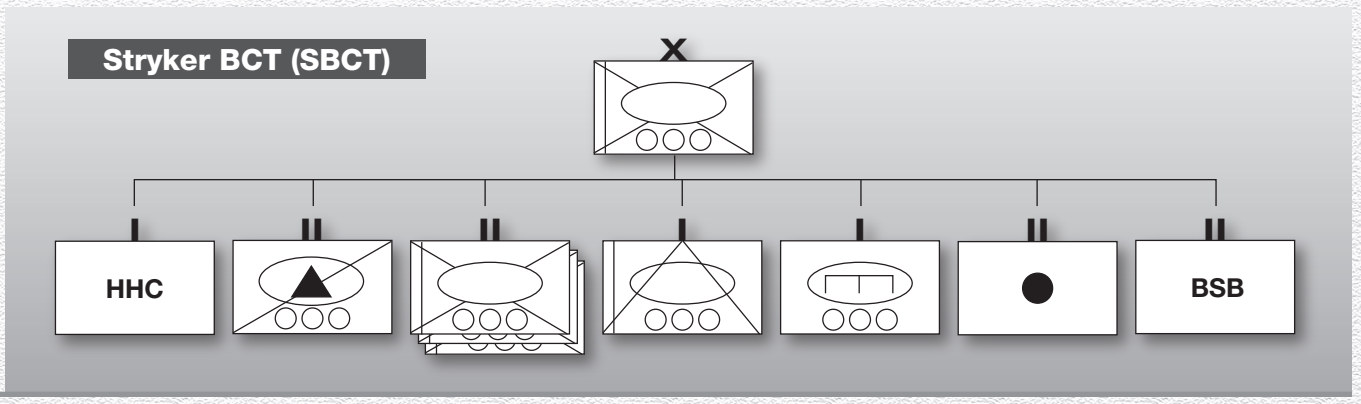
Also, in his key tasks or in tasks to subordinate leaders, the battery commander must identify what he thinks must be accomplished before the unit can assume a follow-on mission. If done correctly, he will provide the unit focused planning priorities and a smooth transition into its next mission and will reinforce the troop-leading procedures as a continual process for mission success.

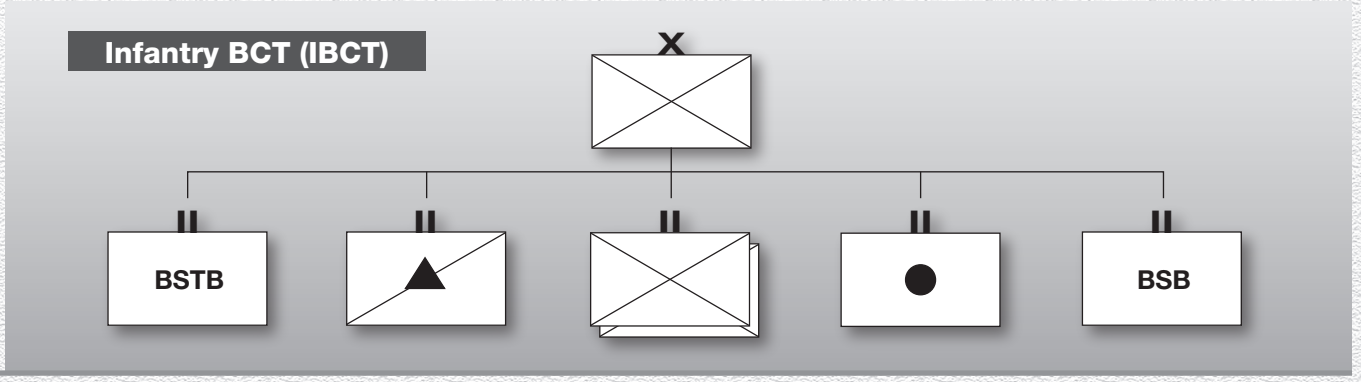
Firing batteries aggressively attack every mission at the NTC, and SASO missions are no different. To maximize this energy, batteries must refine their skills and train their leaders to operate in a time-constrained environment supporting multiple missions simultaneously and preparing to transition into follow-on missions. The reward for these efforts will be maximized training opportunities as batteries prepare for deployment and mission success on the battlefield.

Major Jerome (Jay) S. Morrison II is the Assistant Battalion S3 Combat Trainer and has been a Firing Battery Trainer at the National Training Center, Fort Irwin, California. In his previous assignment, he was the Deputy Operations Officer for Task Force Olympia in the MultiNational Brigade (Northwest), part of the MultiNational Corps, Iraq (MNC-I). While in Iraq, he commanded C Battery, 1st Battalion, 37th Field Artillery (C/1-37 FA), 3rd Stryker Brigade Combat Team (SBCT), 2nd Infantry Division. Also in the 2nd Division, he was the Fire Support Officer for 1-23 IN. Among other assignments with the 25th Infantry Division, he was the Executive Officer for Headquarters and Headquarters Battery, 2-8 FA, and the Company Fire Support Officer for A/5-20 IN, at Fort Lewis, Washington.

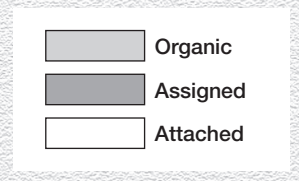
Brigade Combat Teams

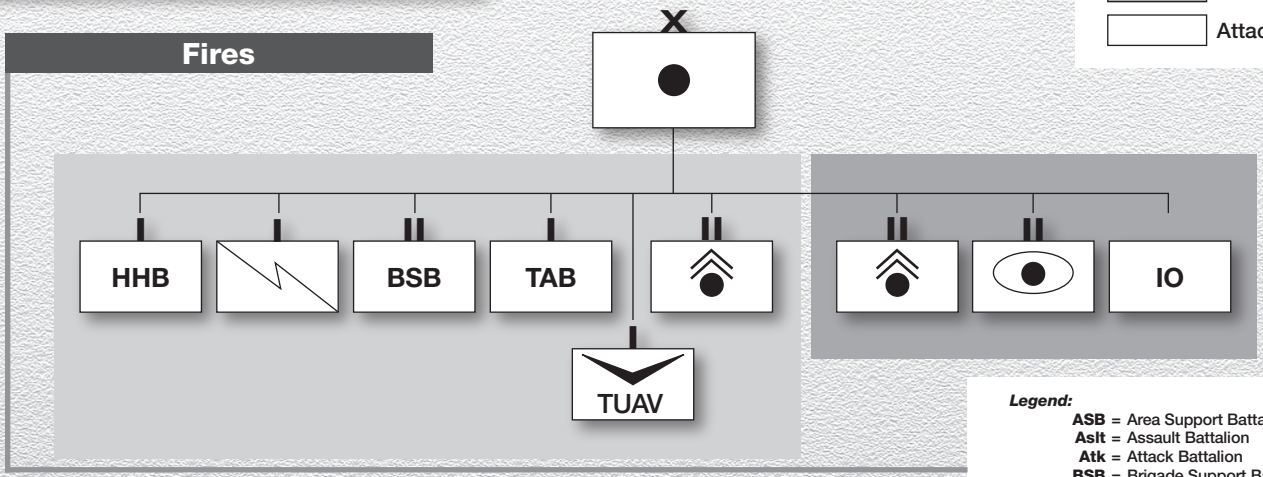






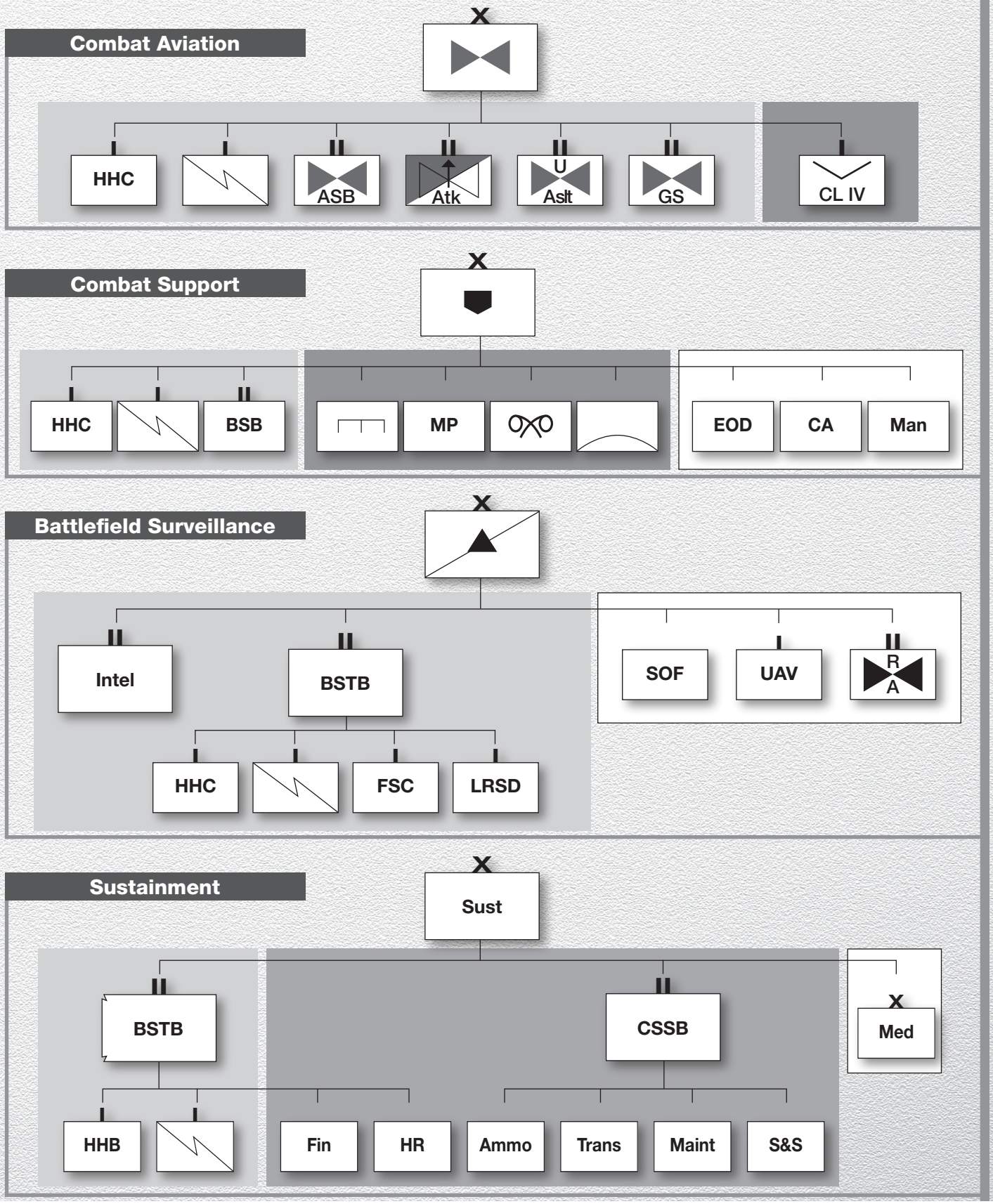
Support Brigades





Legend:

ASB = Area Support Battalion
Aslt = Assault Battalion
Atk = Attack Battalion
BSB = Brigade Support Battalion
BSTB = Brigade Special Troops Battalion



CA = Civil Affairs
CL IV = Class IV UAV
CSSB = Combat Service Support Battalion
EOD = Explosive Ordnance Detachment
FSC = Forward Support Company
GS = General Support
HHC = Headquarters and Headquarters Company
HHB = Headquarters and Headquarters Battery
HR = Human Resources
IO = Information Operations
LSRD = Long-Range Surveillance Detachment
Man = Maneuver
MP = Military Police
RA = Reconnaissance and Attack Battalion
RSTA = Reconnaissance, Surveillance and Target Acquisition
SOF = Special Operations Forces
Spt = Support
S&S = Supply & Support
TAB = Target Acquisition Battery
TUAV = Tactical UAV
UAV = Unmanned Aerial Vehicle

Fires Brigades

Note: These are the Fires Brigade and Air Defense Artillery (ADA) unit designations proposed in October by the Center of Military History, Fort McNair, Washington, DC.

AC

- 4th Fires Brigade
- 17th Fires Brigade
- 18th Fires Brigade
- 75th Fires Brigade
- 212th Fires Brigade
- 214th Fires Brigade

ARNG

- 45th Fires Brigade
- 138th Fires Brigade
- 142nd Fires Brigade
- 169th Fires Brigade
- 197th Fires Brigade
- 65th Fires Brigade

ADA Units Above Battalion

Note: Air Defense Artillery (ADA) battalions retain their current designations.

AC

- 32nd Army Air and Missile Defense Command
- 94th Army Air and Missile Defense Command

ARNG

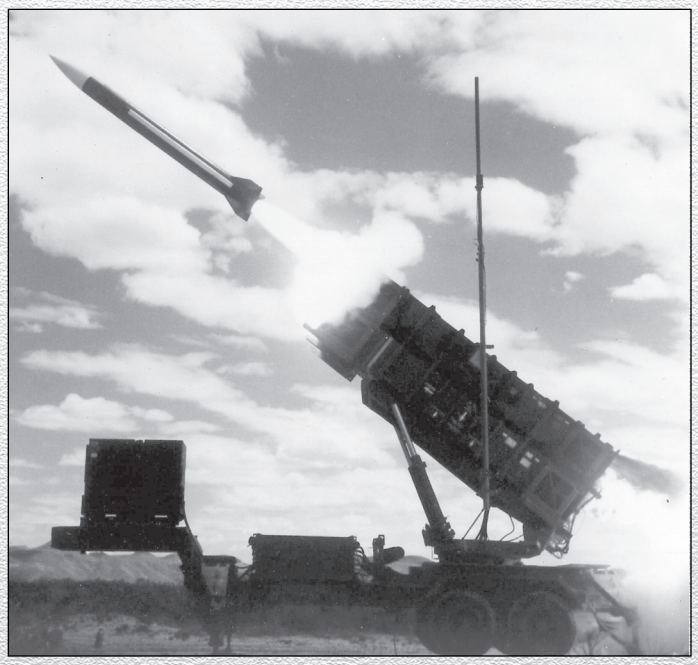
- 111th Air Defense Artillery Brigade (Corps)
- 164th Air Defense Artillery Brigade (Corps)

ARNG

- 263rd Army Air and Missile Defense Command

AC

- 11th Air Defense Artillery Brigade (Echelons Above Corps)
- 31st Air Defense Artillery Brigade (Corps)
- 35th Air Defense Artillery Brigade (Echelons Above Corps)
- 108th Air Defense Artillery Brigade (Corps)



AC BCTs—2011*

HQ, 1st Armored Division
Fort Bliss, Texas

1st HBCT Fort Bliss	1-36 IN 1-37 AR 6-1 Cav	2-3 FA 501 BSB BSTB
2nd HBCT Fort Bliss	1-6 IN 1-35 AR 1-13 Cav	4-27 FA 47 BSB BSTB
3rd HBCT Fort Bliss	1-41 IN 2-70 AR 1-1 Cav	4-1 FA 125 BSB BSTB
4th HBCT Fort Bliss	2-6 IN 2-34 AR 2-13 Cav	2-29 FA 123 BSB BSTB

HQ, 1st Cavalry Division
Fort Hood, Texas

1st HBCT Fort Bliss	2-5 Cav 2-8 Cav 5-9 Cav	1-82 FA 115 BSB BSTB
2nd HBCT Fort Hood	1-5 Cav 1-8 Cav 4-9 Cav	3-82 FA 15 BSB BSTB
3rd HBCT Fort Hood	1-12 Cav 1-7 Cav 6-9 Cav	2-82 FA 215 BSB BSTB
4th HBCT Fort Hood	2-7 Cav 2-12 Cav 1-9 Cav	5-82 FA 27 BSB BSTB

HQ, 1st Infantry Division
Fort Riley, Kansas

1st HBCT Fort Riley	1-16 IN 1-63 AR 4-4 Cav	1-5 FA 101 BSB BSTB
2nd HBCT Fort Riley	1-18 IN 1-77 AR 5-4 Cav	1-7 FA 299 BSB BSTB
3rd IBCT Fort Riley	2-2 IN 1-26 IN 6-4 Cav	1-6 FA 201 BSB BSTB
4th IBCT Fort Knox, Kentucky	2-16 IN 1-28 IN 1-4 Cav	2-32 FA 701 BSB BSTB

HQ, 2nd Infantry Division
Republic of Korea

1st HBCT Korea	2-9 IN 1-72 AR 4-7 Cav	1-15 FA 302 BSB BSTB
2nd SBCT Fort Lewis, Washington	2-1 IN 1-17 IN 4-23 IN 8-1 Cav 2-17 FA	2 BSB A/52 IN 562 EN Co 21 SIG Co 572 MI Co
3rd SBCT Fort Lewis	2-3 IN 5-20 IN 1-23 IN 1-14 Cav 1-37 FA	296 BSB C/52 IN 18 EN Co 334 SIG Co 209 MI Co
4th SBCT Fort Lewis	4-9 IN 2-23 IN 1-38 IN 2-1 Cav 2-12 FA	702 BSB F/52 IN 38 EN Co 472 SIG Co 45 MI Co

HQ, 3rd Infantry Division
Fort Stewart, Georgia

1st HBCT Fort Stewart	2-7 IN 3-69 AR 5-7 Cav	1-41 FA 3 BSB BSTB
2nd HBCT Fort Stewart	3-15 IN 1-64 AR 3-7 Cav	1-9 FA 26 BSB BSTB
3rd HBCT Fort Benning, Georgia	1-30 IN 2-69 AR 3-1 Cav	1-10 FA 203 BSB BSTB
4th HBCT Fort Stewart	3-7 IN 4-64 AR 7-1 Cav	1-76 FA 703 BSB BSTB

**Designations proposed by the Center of Military History in October.*

AC BCTs—2011

HQ, 4th Infantry Division
Fort Carson, Colorado

1st HBCT Fort Carson	1-22 IN 1-66 AR 8-10 Cav	4-42 FA 4 BSB BSTB
2nd HBCT Fort Carson	2-8 IN 1-67 AR 1-10 Cav	3-16 FA 204 BSB BSTB
3rd HBCT Fort Carson	1-8 IN 1-68 AR 4-10 Cav	3-29 FA 64 BSB BSTB
4th IBCT Fort Carson	1-12 IN 2-12 IN 3-61 Cav	2-77 FA 704 BSB BSTB

HQ, 10th Mountain Division
Fort Drum, New York

1st IBCT Fort Drum	1-87 IN 2-22 IN 1-71 Cav	3-6 FA 10 BSB BSTB
2nd IBCT Fort Drum	2-14 IN 4-31 IN 1-89 Cav	2-15 FA 210 BSB BSTB
3rd IBCT Fort Drum	1-32 IN 2-87 IN 3-71 Cav	4-25 FA 710 BSB BSTB
4th IBCT Fort Polk, Louisiana	2-30 IN 2-4 IN 3-89 Cav	5-25 FA 94 BSB BSTB

HQ, 25th Infantry Division
Schofield Barracks, Hawaii

1st SBCT Fort Lewis	1-5 IN 3-21 IN 1-24 IN 5-1 Cav 2-8 FA	25 BSB D/52 IN 73 EN Co 176 SIG Co 184 MI Co
2nd SBCT Schofield Barracks	1-14 IN 1-21 IN 1-27 IN 2-14 Cav 2-11 FA	225 BSB B/52 IN 66 EN Co 556 SIG Co 185 MI Co
3rd IBCT Schofield Barracks	2-27 IN 2-35 IN 3-4 Cav	3-7 FA 325 BSB BSTB
4th IBCT (Airborne) Fort Richardson, Alaska	1-501 IN 3-509 IN 1-40 Cav	2-377 FA 725 BSB BSTB

HQ, 82nd Airborne Division
Fort Bragg, North Carolina

1st IBCT (Airborne) Fort Bragg	1-504 IN 2-504 IN 3-73 Cav	3-319 FA 307 BSB BSTB
2nd IBCT (Airborne) Fort Bragg	1-325 IN 2-325 IN 1-73 Cav	2-319 FA 407 BSB BSTB
3rd IBCT (Airborne) Fort Bragg	1-505 IN 2-505 IN 5-73 Cav	1-319 FA 82 BSB BSTB
4th IBCT (Airborne) Fort Bragg	1-508 IN 2-508 IN 4-73 Cav	2-321 FA 782 BSB BSTB

HQ, 101st Airborne Division
Fort Campbell, Kentucky

1st IBCT Fort Campbell	1-327 IN 2-327 IN 1-32 Cav	2-320 FA 426 BSB BSTB
2nd IBCT Fort Campbell	1-502 IN 2-502 IN 1-75 Cav	1-320 FA 526 BSB BSTB
3rd IBCT Fort Campbell	1-187 IN 3-187 IN 1-33 Cav	3-320 FA 626 BSB BSTB
4th IBCT Fort Campbell	1-506 IN 2-506 IN 1-61 Cav	4-320 FA 801 BSB BSTB

173rd (Airborne) IBCT Vincenza, Italy	1-503 IN 2-503 IN 1-91 Cav	4-319 FA 173 BSB BSTB
2nd Cav Reg (RSTA) (SBCT) Germany	1-2 IN 2-2 IN 3-2 IN 4-2 RSTA FA Sqdn	Spt Sqdn A-A Trp EN Trp SIG Trp MI Trp
3rd Armored Cavalry Regiment (ACR) Fort Hood	1-3 Sqdn 2-3 Sqdn 3-3 Sqdn 4-3 RAS Spt Sqdn	ADA Btry 89 Chem Co 43 EN Co 66 MI Co
11th ACR Fort Irwin, California	1-11 AR 2-11 IN	Spt Sqdn

Army National Guard Proposed Alignment*

Headquarters	Brigade	Fires Battalion
28th Division Pennsylvania	**2/28th HBCT Pennsylvania, Ohio**	1-107 FA Pennsylvania
	55/28th HBCT Pennsylvania	1-109 FA Pennsylvania
	56/28th SBCT Pennsylvania	1-108 FA Pennsylvania
	53rd IBCT Florida	2-116 FA Florida
29th Division Maryland	**116th IBCT Virginia**	1-111 FA Virginia
	3/29th IBCT Maryland	2-110 FA Maryland
	30th HBCT North Carolina, West Virginia	1-113 FA North Carolina
	92nd IBCT Puerto Rico	2-162 FA Puerto Rico
34th Division Minnesota	**32nd IBCT Michigan**	1-120 FA Wisconsin
	1/34th HBCT Minnesota	1-125 FA Minnesota
	2/34th IBCT Iowa, Minnesota	1-194 FA Iowa
	116th HBCT Idaho, Montana, Oregon	1-148 FA Idaho
35th Division Kansas, Missouri, Illinois	**66/35th IBCT Illinois**	2-122 FA Illinois
	45th IBCT Oklahoma	1-160 FA Oklahoma
	48th IBCT Georgia	1-118 FA Georgia
	218th HBCT South Carolina, Kansas	1-178 FA South Carolina

**These are the ARNG modular divisions with their BCT designations proposed by the Center of Military History in October. The FA battalions listed with the BCTs are not in the proposal; they are the FA battalions habitually associated with the BCTs.*

Headquarters	Brigade	Fires Battalion
36th Division Texas	**49/36th IBCT Texas**	1-133 FA Texas
	56/36th IBCT Texas	3-133 FA Texas
	39th IBCT Arkansas	1-206 FA Arkansas
	155th HBCT Mississippi	2-114 FA Mississippi
	256th HBCT Louisiana	1-141 FA Louisiana
38th Division Indiana	**37/38th IBCT Ohio, Michigan**	1-134 FA Ohio
	149/38th IBCT Kentucky, Alabama	1-117 FA Alabama
	76th IBCT Indiana	1-163 FA Indiana
	278th HBCT Tennessee	3-115 FA Tennessee
40th Division California	**29th IBCT Hawaii, Arizona**	1-487 FA Hawaii
	2/40th IBCT California	1-144 FA California
	41st IBCT Oregon	2-218 FA Oregon
	81st HBCT Washington, California	2-146 FA Washington
	207th IBCT Alaska, Arizona, California, New Mexico Georgia, Indiana, Nebraska	2-180 FA Arizona
42nd Division New York	**27/42nd IBCT New York**	1-258 FA New York
	50/42nd IBCT New Jersey	3-112 FA New Jersey
	86/42nd IBCT Vermont, New Hampshire, Connecticut, Maine	1-86 FA Vermont
	26th IBCT Massachusetts, New Mexico, Rhode Island	1-101 FA Massachusetts