

# ***Field Artillery***

*A Professional Bulletin for Redlegs*

July-August 2001

# **BRING UP THE GUNS**



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A Professional Bulletin for Redlegs

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## CHIEF OF FA FAREWELL ARTICLE

- 1 Field Artillery- Relevant, Trained and Ready- Two Years Later**  
*By Major General Toney Stricklin*

## INTERVIEW

- 7 Transforming the Army- From Korea to Today**  
*An Interview with Major General (Retired) Robert H. Scales, Jr.  
Historian and Former Commandant of the Army War College, Carlisle  
Barracks, Pennsylvania*

## ARTICLES: History

- 10 World War I: Joint Fires in the East African Campaign**  
*By Major Peter J. Williams, Royal Canadian Artillery*
- 16 Spanish Civil War: The German Kondor Legion, A Force Firepower Package in Combat**  
*By Major Prisco R. Hernandez, ARNG*
- 22 American Civil War: "The Fatal Blunder of the Day"- The Artillery Fight at the First Battle of Bull Run**  
*By Captain Gary J. Schreckengost, ARNG*
- 29 2002 History Contest Rules**
- 30 Observations of a [1946] Battery Commander**  
*By Captain John J. Norris, The Field Artillery Journal, July 1946*
- 34 Confessions of a (Once) Artillery Lieutenant**  
*By Brigadier General (Retired) Richard F. Allen, USAR*

## ARTICLES: Feature

- 38 Tuzla to Cortina: From Peacekeeping to Warfighting**  
*By Lieutenant Colonel Samuel H. Johnson and Major Donald H. Myers*
- 43 MLRS Live-Fire Qualification Through Multi-Echelon Training**  
*By Lieutenant Colonel Gary A. Agron and Major Steven Bratina*

## DEPARTMENTS

- 33 FROM THE GUN LINE**
- 36 REDLEG REVIEWS**

*Front Cover:* 19th century reenactors from the Loyal Train of Artillery Chapter of the US Field Artillery Association live-fire during their 16th annual black powder shoot on Memorial Day at Fort Sill, Oklahoma.

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# Field Artillery Relevant, Trained and Ready... Two Years Later

By Major General Toney Stricklin

*On the eve of my departure as your Chief of Field Artillery and Commandant of the Field Artillery School, I want to refer to my first "From the Firebase" column in the September-October 1999 edition and put the last two years into perspective. As I wrote my first column, "Field Artillery: Relevant, Trained and Ready," the branch had been questioned about responsiveness and effectiveness in close support for a decade or more, just as we are today.*

As I assumed command of Fort Sill, the Chief of Infantry published an article in the same edition of the magazine in which my first column appeared, which he titled "Is the Field Artillery Walking Away from the Close Fight?" Categorically, I answered, "No!" and stated my rationale.

This past April, a similar article appeared in *ARMY*, titled "Classical Fire Support vs. Parallel Fires." It criticized our branch and Field Artillerymen for failing to support maneuver commanders with responsive and effective close supporting fires. During the time between these two defining articles, this close support issue continued to resonate within my major command—US Army Training and Doctrine Command (TRADOC).

We, the branch, as well as the Army as a whole do have a problem providing responsive and accurate close supporting fires. From the perspective of some, this issue lies squarely at the base of Blockhouse Signal Mountain and is solely a Field Artillery problem. However, after studying the issue extensively for the past 12 years—beginning in 1988 as a direct support (DS) FA battalion commander; in 1991 as the Senior Fire Support Trainer at the National Training Center (NTC), Fort Irwin, California; in 1992 as an FA brigade commander; in 1994 as Director of Combat Developments in the FA School; in 1997 as Assistant Commandant of the FA School; and finally, during the past two years, as Commandant of the school—my read is the problem is far more complex and involves much more than just the Field Artillery. This is a fire support issue shared across the Army with Field Artillerymen, maneuver commanders, Combat Training Centers (CTCs) and those on the Army staff responsible for resourcing the Army. There is no one culprit. However, the Field Artillery, alone, cannot fix the problem.



I have invested a lot of time at the NTC and Joint Readiness Training Center (JRTC), Fort Polk, Louisiana, since becoming Commandant—I suspect more than any Field Artillery School Commandant. While there, I have seen some well-trained FA units, providing responsive, accurate fire support to their maneuver brigades. Unfortunately, those “bright spots” were not the rule. The Army’s CTC trends also confirm this. And just as I did in my first column two years ago, unfortunately I can state we are growing generations of maneuver commanders who do not appreciate the value fire support brings to the fight.

Successful solutions will have to be implemented by the Field Artillery, maneuver commanders and Army-level force developers. The Field Artillery accepts the challenge of working “our lane” aggressively, but there is much work to go around in other venues as well.

Although some of the solutions include changes that must be incorporated into operations at our CTCs, in no way are my comments intended as criticism of the CTCs. Our CTCs have been and remain the “crown jewels” of the Army’s training strategy. But over the years, many have come to realize that our CTCs have shortcomings in how fires are replicated.

**Understanding DS.** Our performance at the CTCs during the past two decades has caused many to look for explanations as to why close support is not what it was in World War II, Korea or Vietnam. The April *ARMY* article blames doctrine. The article suggests we shifted our doctrine to “parallel” fires where the FA plans and executes fires parallel

to maneuver and the two never intersect. It further says that the advent of parallel fires “banished” maneuver leaders from planning and controlling their supporting artillery. The article implies the need to return to “classical fire support.”

The fact is that fire support doctrine for DS artillery has been consistent for three decades. That doctrine is neither Parallel nor Classical.

One challenge in defining the problem is for everyone to understand DS and its relationship to close support. Some believe DS is synonymous with close support. In fact, close supporting fires are only part of the DS mission.

The four support relationships (standard tactical missions) of DS, general support (GS), reinforcing (R) and GSR as defined in FM 6-20, our capstone fire support doctrine, have not changed. The focus of DS is and always has been to provide responsive, accurate fires for the supported maneuver unit—normally, a maneuver brigade. This means the DS battalion provides the fires the brigade commander directs it to provide in close consult with his fire support coordinator (FSCOORD). However, DS also includes brigade shaping (interdiction) fires and counterfire. All are critical fire support tasks for the maneuver brigade and sometimes generate competition for priority of limited fire support assets. These critical tasks must be integrated and balanced in accordance with the maneuver brigade commander’s mission, intent and scheme of fires.

Probably the most significant issue in determining if today’s direct support is

correctly focused is the expectation for immediately responsive fires at the maneuver battalion task force and subordinate companies. These echelons expect responsive planned and unplanned fires at their levels—as well they should.

However, this expectation must consider mortars first and move on to DS FA. Army doctrine has always emphasized mortars as a major contributor to fires at the maneuver battalion and company levels. This is why mortars exist and are organic to maneuver. NTC observations note the continuing problems of integrating mortars into the fight—adding to our close support challenges.

Adequate fire support doesn’t mean the DS unit engages every target. Expecting the DS artillery battalion to be the sole provider of close support never has been fire support doctrine. Close supporting fires also must incorporate Army aviation and joint assets.

Maneuver expectations at the brigade level may be somewhat different than those at the battalion or company levels. DS artillery first must meet the expectations of the supported commander—the brigade commander. The brigade commander is not “banished” unless he chooses to be. There’s no question that some brigade commanders are more involved in the direction of their fire support than others. But it’s also a fact that when a brigade commander is involved in directing the synchronization of maneuver and fires, his fires tend to be more effective, both shaping and close support.

**Causes of the Problem.** As NTC observations indicate, there are two major aspects of the problem—responsiveness and effectiveness. These challenges also surface at the other maneuver CTCs. However, “lightfighters” tend to focus their fire support better at home station through combined arms live-fire exercises and, generally, do better at the JRTC. Therefore, I use the NTC as my example.

**FA Challenges.** The latest “Center for Army Lessons Learned (CALL) Bulletin” for the NTC (May 2001) states that close fires lack “responsiveness” and “focus and mass of fires in execution,” a typical observation of fire support performance at the NTC for at least the past decade. Two significant reasons for these challenges exist: the delivery system is too old and our observed target engagement system needs improvements.



Although responsiveness and effectiveness challenges surface at all the CTCs, the lightfighters tend to focus fire support better in home-station training and, generally, do better at the JRTC. (Photo by Raymond A. Barnard, Command Photographer, JRTC, Fort Polk)





***Brigade commanders demand their FSCOORDs engage enemy formations as deep as possible to eliminate...a close fight and, if unsuccessful, to shape the close fight for their subordinate battalions.***

First, our delivery systems are old and unresponsive. Our medium and light towed systems are worn out, and our medium self-propelled howitzer is perched on a 40-year-old chassis. Only one is capable of supporting offensive operations--the M119 towed 105-mm howitzer, but it is mechanically unreliable. Paladin and the M198 towed 155-mm are cumbersome, labor-intensive and unable to support fast-moving, offensive-oriented maneuver operations.

Second, accurately locating targets, positioning observers in the correct location to observe and adjust fires, maintaining functional long-range communications (digital and voice), and creating a flexible digital fire support architecture are among the major challenges of our observed target engagement system.

These are not NTC challenges, they are FA branch challenges. The Field Artillery School has "stepped up to the plate" and is formulating solutions.

The new and improved joint, light-weight 155-mm howitzer (LW 155) will replace the M198, beginning in FY06. Although experiencing some developmental issues, this howitzer is designed to complement fast-moving operations in urban and complex terrain. We know the M119 must be replaced by 2014. Our plan is to replace it with a more agile system that has greater range and accuracy. However, some transformation challenges must be resolved before we can select the new system.

Crusader is replacing Paladin. With its range, rate-of-fire and survivability, Crusader will complement our counter-offensive force's offensive capabilities and support small-scaled contingencies and security support operations.

At the NTC, we tend to fire targets as directed by maneuver leaders, which is what the April article says happens in Classical fire support. We tend to "shoot-this-now" based on spot reports, intelligence fusion and unmanned aerial

vehicles (UAVs) without a target location sufficient for engagement or an observer in place to see the mission through to completion. Without an observer(s) or another sensor that can see the target to assess the effectiveness of the initial volley and adjust the fires or reattack as necessary, the result is highly predictable: ineffective fires. The shoot-this-now mindset calls for a combined arms solution.

The complete cycle of a target engagement that was routinely executed during Vietnam is no longer the norm at the NTC or in home-station combined arms training. Even with observers in the right place, they rarely adjust the FA or mortars. At least to some extent, this is due to simulations that have given the force a false sense of what it takes to engage a target effectively. Unfortunately in simulations, we simply fire-for-effect against an icon and get good results. It doesn't work that way at the NTC or in combat.

Being able to engage an enemy formation in conjunction with maneuver requires a responsive fire support system. Probably the most demanding requirement is for the FA to engage an enemy armored formation moving in open terrain. These formations often move two miles in 10 minutes at the NTC. To be most effective with our area munitions, we must have the discipline to track the enemy to a well-planned engagement area. This usually is in canalized terrain or in conjunction with obstacles. Further, we must have an observer or other sensor in place that can track the enemy and access delivery systems with the responsiveness to engage the moving formation at the right time.

Under these conditions, radio or digital relays exacerbate the challenge, often causing the fire direction center (FDC) to be unsure of which observer initiated the fire mission. The responses "Shot" and "Splash" are often missing, so no observer adjusts fires on those targets.

*Other Challenges.* Given its vast expanse for live, force-on-force maneuver, the NTC is the most dynamic envi-

ronment our heavy units encounter, short of actual combat. It was precisely this environment that was a major factor in training combined arms units for our resounding victory in Operation Desert Storm.

This dynamic training environment demands much from our DS units. At the NTC, the DS unit must juggle the competing demands for brigade shaping fires, counterfire against mortars and regimental artillery groups, and close supporting fires. (Although these types of fires seldom occur in that sequence, we approach it that way.) When the requirements for special missions are necessary—such as family of scatterable mines (FASCAM), smoke and suppression of enemy air defenses (SEAD)—and combined with the inevitable short supply of time, too often there are not enough assets to fire the missions. Even with a reinforcing battalion, the FA at the NTC faces a major challenge.

The battlespace of today's Force XXI heavy maneuver brigade has expanded to a size comparable to the battlespace of a division or even a corps in the past. It must be capable of fighting in a distributed, non-linear battlespace. During the last 15 years, maneuver brigade commanders, with assistance from their FSCOORDs, have tried to expand to dominate this larger battlespace.

The addition of enhanced reconnaissance, surveillance and target acquisition (RSTA) assets, such as combat observation lasing teams (COLTs), scouts and UAVs, have given the brigade an unprecedented ability to find the enemy at depth. Brigade commanders demand their FSCOORDs engage enemy formations as deep as possible to eliminate or minimize the necessity for a close fight and, if unsuccessful, to shape the close fight for their subordinate battalions.

Subsequently, the brigade transfers priority-of-fires to a task force. NTC trends have indicated that the battle hand-over between the brigade deep and close fights is seldom smooth and sometimes causes competition for fires

between tactical depths and close combat.

Downsizing our cannon battalions has exacerbated the problem. With the 1996 decision to reduce howitzer battalions from 24 to 18 guns (a 25 percent reduction), the Army accepted what it thought was short-term risk. The plan to mitigate this risk was the fielding of the critical delivery systems of Crusader and the enhanced multiple-launch rocket system (MLRS) M270A1 launcher and the precision munitions enablers of sense and destroy armor (SADARM) and the MLRS smart tactical rocket (MSTAR). Since that time, Crusader fielding has shifted from FY05 to FY08 with fewer battalions receiving the system than originally planned. (Only the Counter-attack Corps and supporting FA brigades will field Crusader.) And funding for SADARM and MSTAR was terminated.

Without the continued development of smart munitions, our DS units will be limited to executing missions largely with area munitions for the foreseeable future. These munitions require an accurate target location and rely on volume for lethality. Firing an appropriate volume of area munitions usually comes at the expense of firing other missions.

**Solutions.** The problem is complex with no quick or easy set of solutions. The solutions cross the domains of doctrine, training, leader development, material and organizations and must be implemented over time. However, work is ongoing today that will serve as a catalyst for change.

**Training.** Realistic training at home station may be one of the most effective ways to better provide responsive, effective fires. Given today's dynamic world situation and the many venues to which the US Army is committed, home-station training is not the priority it was 12 years ago before downsizing. All leaders (section chiefs to battalion commanders) must learn how to train at home station better.

The battalion command sergeant major (CSM) must ask himself a series of questions: "Is my home-station Sergeant's Time training synchronized

with our upcoming NTC (or JRTC) rotation? Do the soldier individual and section crew tasks complement the battery and battalion commanders' collective training plan leading up to our CTC rotation? Are we going 'through the motions' of FA training by erecting the OE254 antenna, donning the protective mask or practicing other skills not associated with providing responsive, effective fires?"

The battery commander must ask, "Do I and my platoon leaders use a stopwatch to time all gunnery tasks that have a time standard?" If we are to solve responsiveness issues our battery, platoon and section leaders must use their stopwatches to train to standard.

Here are a few tips endorsed by our NTC fire support trainers to help Field Artillerymen train their units better.

- **Training Observers.** Fire support teams (FISTs) and forward observers (FOs) are our most neglected soldiers. Commanders must place special emphasis on the equipment, training, evaluation and certification of observers.

Our FOs need training in the tactical employment, maneuver, use of technology and "boresight" of the ground/vehicular laser locator designator (GVLLD), Hellfire ground support simulator (HGSS) and mini eye-safe laser infrared observation set (MELIOS) to ensure they can deliver the eight-digit grid we need for accuracy. Our observers need the personal attention of the battalion CSMs and our FSCOORDs. Battalions need to train at home station to execute a fire plan/scheme of fires instead of just training on a list of missions.

- **Unobserved Fires.** Remarkably, about 75 percent of our close fire missions at the NTC are *unobserved*. Most of these are spot report shoot-this-now fire missions—shooting the grid of a maneuver spot report without anyone to adjust the fires, end the mission or assess the battle damage.

This must *stop*. If the target is important enough to shoot, it is important enough for the originator to become an FO—we should *not* shoot unobserved

fires in this age of sensor availability. When someone says, "Shoot this now!" FSCOORDs and fire support officers (FSOs) must respond, "Get an observer to initiate fires on that target."

- **Responsiveness.** We need true sensor-to-shooter linkages to make our fires more responsive. We must streamline the digital architecture for the observer to communicate directly with the shooter, not communicate via a series of fire support elements (FSEs).

- **Paladin Operations.** Until Crusader is fielded, commanders must train Paladin battalions, batteries and platoons to fight their mobile artillery platforms. Paladin units are employing too many set-piece tactics without a sense of urgency. For example, Paladin occupations are too slow and deliberate—primarily due to fire direction centers (FDCs) and dry-fire verification requirements.

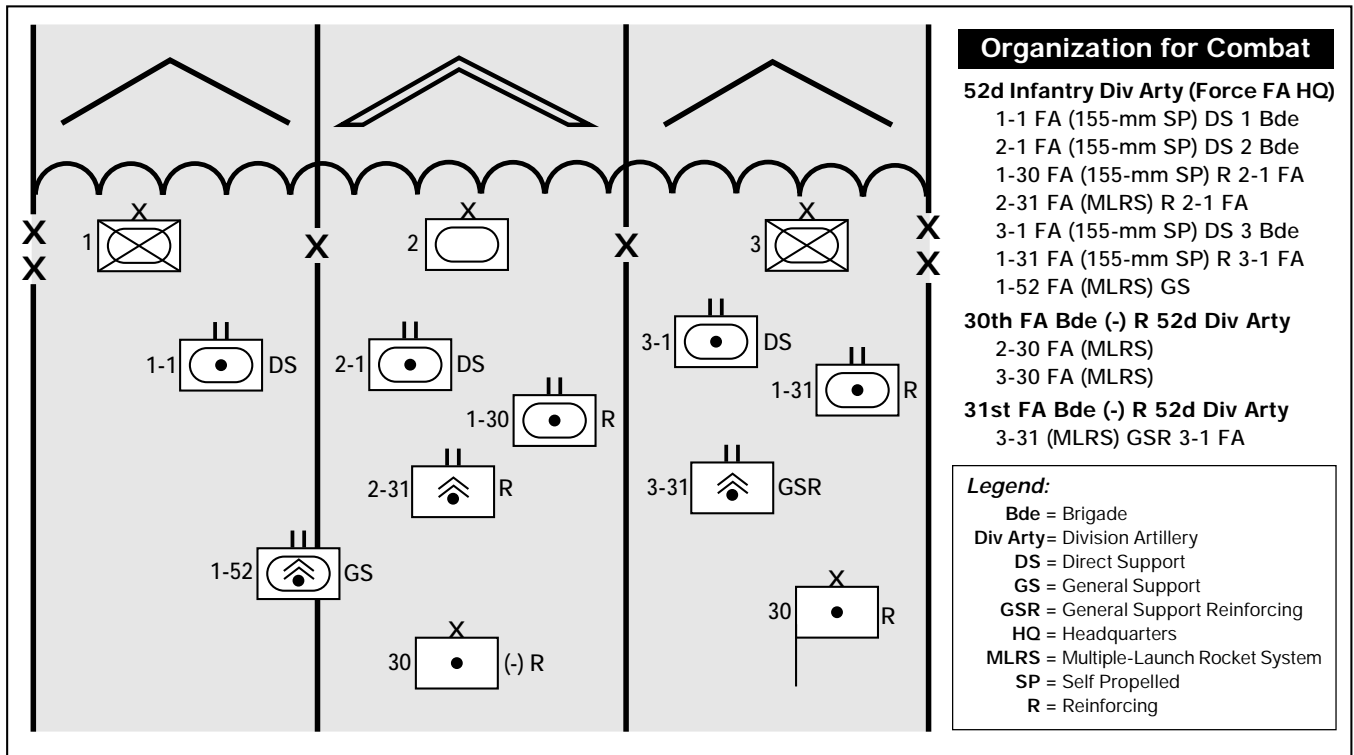
**Organizing for Combat.** We must have the flexibility to organize for combat at the CTCs as we will in actual combat. In 1994-1995, the Army Science Board proposed and the Army approved changes to the allocation rules that placed two FA brigades (six battalions: two cannon and four MLRS) in support of each committed division. This allocation significantly increased the firepower available to both the divisions and their maneuver brigades.

In combat operations, a DS FA battalion in a brigade supporting effort may have more than one FA battalion reinforcing its fires. The reinforcing battalions could be both cannon and rocket. Such organization for combat would help to alleviate the competition for close supporting fires, shaping fires and counterfire by increasing the number of delivery units, volume and range.



**...Crusader fielding has shifted from FY05 to FY08 with fewer battalions receiving the system than originally planned.**





Notional Division FA Organization for Combat. With the 52d Infantry Division (Mechanized) committed, the main effort and supporting brigades have more fire support assets, applying the combat allocation rule of two FA brigades per committed division. Note the 52d Division Artillery retains three battalions of MLRS (1-52 FA, 2-30 FA and 3-30 FA) and has a “string” on a third (3-31 FA).

The figure shows an organization for combat of a notional committed “52d Infantry Division (Mechanized).” The main effort and supporting brigades have more fire support assets while the division retains three battalions of MLRS (1-52 FA, 2-30 FA and 3-30 FA) and has a “string” on another battalion (3-31 FA) for executing the division’s counterfire and deep fires, the latter also prosecuted by the division’s Army aviation.

The April ARMY article suggested that “...division-supporting fires...is desynchronizing...because the brigade has lost fire support.” This is incorrect. FA battalions with a DS mission are, for all practical purposes, organic to the maneuver brigades at the NTC—the brigade combat teams (BCTs). Those who argue that FA battalions should be organic to their maneuver brigades to enhance their responsiveness should look again at how we fight at the NTC. The DS relationship between the FA battalion and the brigade allows the division to retain flexibility of fires without impeding its level of support.

Competition for fire support assets at the division level is not the issue—competing tasks and the synchronization of fires and maneuver at the brigade level are. If we organize at the

NTC as we would in combat, there would be enough assets to routinely mass fires for the division without taking assets away from the maneuver brigades. And, as we probably will in combat, we should consider having the division’s Force FA Headquarters “handle” the counterfire fight at the CTCs, except for mortars.

*Better Digital Fires.* The April article correctly states that our digital fire support architecture blocks the maneuver commander’s ability to know what’s going on with his fires. Operating digitally doesn’t provide the same level of understanding as existed with voice nets. We need digital capabilities that let the entire combined arms team have visibility over where fires are being focused at any time in the fight. But FA units must not return to the voice era to do this, although many have.

The advanced FA tactical data system’s (AFATDS’) new “client” software will begin to restore that visibility digitally. When maneuver battalion task forces can see where indirect fires are being focused and the types of targets being engaged, they can help fire supporters shift the focus. With such real-time knowledge of the big picture, maneuver subordinates may conclude that shaping fires in support of the brigade

or counterfire is the most important task at that point in the fight.

As part of the digital solutions, we need a more streamlined and flexible digital fire support architecture. Today that architecture is too oriented on process and hierarchy. We are working to streamline the architecture to reduce the nodes (intervention points) between the sensor and the shooter while simply informing others. We need to be able to “stream” target location data directly to the howitzers for firing data updates as the enemy moves to the engagement area.

We also need to reduce the time needed to clear fires. Better “situational understanding” of fires and a more streamlined and flexible architecture will help us shift fires at the right time and with the right delivery assets—not all of which are artillery.

*Better Target Location.* We must improve our accuracy in locating targets. We must field an accurate and portable target-locating device soonest. Unfortunately, the Bradley FIST vehicle with an enhanced target location capability is fielding at a very slow rate—another resource issue. We are looking at commercial off-the-shelf alternatives for a partial solution, pending fielding of the lightweight laser designator rangefinder

(LLDR) and, in later years, the enhanced accuracy gimbal laser-mission equipment package (EAGL-MEP) for the interim armored vehicle (IAV).

In conjunction with these efforts, we need an observation device by which the observer can “drag” a target icon to its new location and automatically update the fire plan as he tracks the enemy formation. These updates would be routed automatically to the howitzers so they rapidly could recompute the firing data to accurately engage the moving formation. Tankers use similar technology to engage targets today—why can’t the FA?

*Effects Replication.* We are working closely with TRADOC and the CTCs to better portray FA effects. The Army must *move* to correct long-standing issues in effects replication at the CTCs. For example, we know it doesn’t take 54 rounds of 155-mm to kill a tank.

No matter how many solutions we implement, we won’t be able to change the perception that fires don’t make a difference in the close fight if we continue to use unrealistic measures of fire support effectiveness at our CTCs. The three categories of fire support measured at our CTCs—effective, suppressive and ineffective—do not portray fire support’s full impact on the fight.

The CTCs must replicate the effects of suppressive fires better—not just “killing” fires. Suppression and firepower or maneuver kills can have the same effects as catastrophic kills.

*Maneuver Brigade Priorities.* The brigade commander is responsible for fires throughout his battlespace, not just the close fight. He sets the priorities for the DS unit accordingly—which may not always include a shift in sequence from brigade deep to close. His approval of his *essential* fire support tasks (EFSTs) sets this prioritization in motion and is the basis for his scheme of fires. The fidelity, executability and linkages of these EFSTs to the mission and the maneuver brigade commander’s intent have much to do with knowing when to shift between shaping fires, close supporting fires and counterfire.

We must have combined arms solutions for attacking targets that accomplish the EFSTs at different levels. Today, the high pay-off target list (HPTL) approved by the brigade commander doesn’t always accomplish the EFSTs of his subordinate units. Maneuver commanders’ defining EFSTs that mortars can execute will help. Adding artillery

by realistically organizing for combat will be key.

*Enhanced Simulations.* One of the most difficult (and effective) solutions to make fires more responsive and effective is to replicate and practice overcoming the challenges associated with providing indirect fires integrated with maneuver at home station. Because of resource limitations, much of our combined arms training must be conducted in simulations—and, given the state of simulations, we have a long way to go.

Enhanced simulations would allow units to identify issues, develop procedures and train at home station to prepare for the “graduate level” CTC rotations. For example, enhancing the close combat tactical trainer (CCTT) to more fully replicate all fire support systems would help us work through target engagement and attack challenges and allow fire support and maneuver leaders to understand the consequences of target location errors (TLEs) and unobserved fires. Since its fielding, CCTT has not yielded this level of realism. This is another aspect of the close support problem that calls for Army force developers and priority setters to invest in helping to fix the responsive and effective fires issues.

*Doctrine—Decentralizing.* We may need to shift to decentralized fires down to the maneuver battalion to attain more responsive close support. Organizing for combat with more artillery will facilitate this decentralization. Crusader could make this shift very profound, given the number of missions it can handle with its rate-of-fire, range, accuracy and mobility.

In the near term, perhaps a battalion or battery(s) of Paladins sometimes should be placed DS to a maneuver task force, as the situation dictates, or attached for a limited period of time. The relationship established shouldn’t matter as much as the outcome.

We need to become more agile in establishing command or support relationships at different tactical levels. Optimum support for a maneuver brigade at the NTC may be an MLRS battalion firing most of the brigade’s shaping fires while two Paladin battalions fire close supporting fires and counterfire for the battalion task forces; for a brigade in the supporting role, this is a realistic FA organization for combat. The fires of a portion or all of these units could be massed, close or deep, as required, given that the systems and

munitions to achieve the desired effects are available.

**Long-Term Consequences.** The problems associated with close supporting fires have created the perception that we are less concerned with supporting maneuver in the close fight. Just because we may not always get it right doesn’t mean we aren’t concerned about close support. If distributed operations become dominant in the future, this perception may become more widespread. Reverting back to the old days when close support was all a DS unit did will not solve the problems—in fact, would only create new problems.

The responsiveness and effectiveness of firepower that characterized combat operations in World War II, Korea and Vietnam must be routinely visible at the CTCs. We must implement the solutions outlined in this article and regenerate combined arms commanders’ faith in fires—Armor, Infantry, Aviation and, yes, Field Artillery too. We also must show future generations of combined arms commanders that firepower can be applied with great timeliness and close synchronization of maneuver and fires. We must get to the state where we routinely accomplish this in all training environments.

The FA has not walked away from close support. We understand our many challenges and accept them. But we also need the commitment of the entire combined arms team and the Army to make effective, responsive close supporting fires happen.



Major General Toney Stricklin has been the Chief of Field Artillery and Commanding General of Fort Sill, Oklahoma, since August 1999. He will give up command on 24 August 2001 to Major General Michael D. Maples, who is currently Director of Operations, Readiness and Mobilization in the Office of the Deputy Chief of Staff for Operations and Plans at the Pentagon. After 32 years of service, Major General Stricklin is retiring from the Army.

*Editor’s Note:* This article was taken, in part, from the article “Making Close Supporting Fires Happen” by Major General Stricklin and Colonel (Retired) Sammy L. Coffman that is being published in the ARMY August edition; the ARMY article will appear in print several weeks before this edition of Field Artillery.



Major General (Retired) Robert H. Scales, Jr.  
 Historian and Former Commandant of the Army War College, Carlisle Barracks, Pennsylvania

# Transforming the Force— From Korea to Today

Interview by Patricia Slayden Hollis, Editor

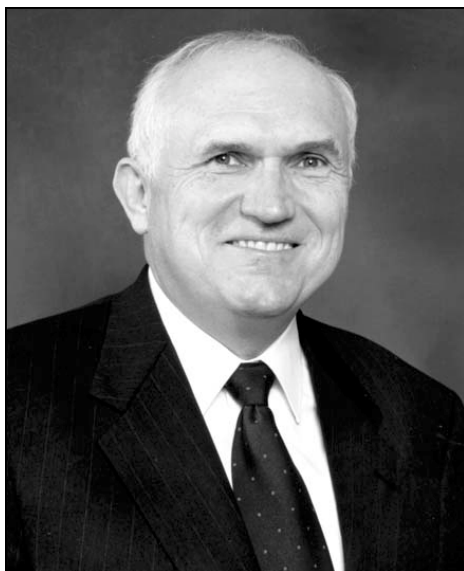
**Q** *As both a participant and historian, what did you learn from the post-Cold War transformation of the Army and how does that apply to the transformation today?*

**A** First, I believe the premise of your question is incorrect—the process of the Army’s transformation actually began with the Korean War and continues today. According to my research and as the thesis of my new book, the Army has been transforming for 50 years from a “big-war” Army into one shaped to fight limited, firepower-intensive wars. [The book is *Three Paradoxes: An Essay on the Future of Land Warfare*, being published by Rowman and Littlefield, Inc., and is due out this fall.]

The Korean War was the first major American conflict in this century that was fought for limited ends. Unlike World Wars I and II, we no longer had a “blank check” to spend resources to achieve national objectives. The process has continued as each successive conflict has shaped and clarified, almost in a Darwinian fashion, how the American Army will have to fight in the future.

The problem was that during the Cold War from 1950 to 1989, our doctrinal focus always returned to the north German plain to the more sinister but more familiar prospect of fighting an unlimited war for national survival against the Russians. To its great credit, the Army quickly learned to modify its fighting methods to accommodate the new realities of limited liability wars.

For most western armies, fighting a limited liability conflict means they have limited resources to pursue their national objectives. And increasingly, beginning in Korea and going through Kosovo, part of limiting the cost of a conflict became limiting the loss of human life. For example, even the Russians in Chechnya had to accommodate



this realization. They learned quickly that they could not afford to suffer huge tactical losses as the Russian people watched the conflict on television

This leads to the question: What does all this mean in terms of firepower? In the classical example, a commander balances his application of maneuver and firepower early in a campaign that is based on the norms of conventional war doctrine. Once the campaign evolves, he adds more and more firepower to limit the exposure of his maneuver forces to destruction, Americans in particular. The problem is that if the war lasts too long, the enemy adapts the way he fights to lessen the killing effects of firepower. Then the demands for killing power become so great that the firepower “tail” starts wagging the operational “dog,” and the military force becomes ossified, resulting in stalemate. Stalemate is a condition no American force can tolerate.

Korea is a good example. In the early days of Korea, we applied doctrinally correct apportionments of maneuver and firepower—roughly two artillery bat-

talions per maneuver brigade with some restricted use of close air support. We tended to approach operations from the Pusan Perimeter up to our withdrawal from the Yalu River in terms of corps- and division-level operations.

Now, “fast forward” to April 1951. The maneuver focus shifted downward as the firepower component escalated. Operations were at the battalion and regimental levels or lower and the apportionment increased radically—as many as 14 to 15 artillery battalions supported a single maneuver *battalion*.

The point is we went through the doctrinal readjustment out of necessity when commanders realized they had to substitute firepower for manpower. Gradually, the infantry transitioned from a traditional big-war maneuver force, in the sense of closing with and destroying the enemy, into a force that found and shaped the enemy for the artillery and air power to kill.

Fast forward to Vietnam. In the early days, operations were multi-brigade and, in some cases, division-level and were supported by the doctrinal apportionment of artillery and close air support. But, again, the employment of maneuver changed and so did the apportionment of artillery.

The first Army leader to really understand this phenomenon was General William Depuy with his “find, fix, flush and finish” maneuver doctrine. When he took command of the 1st Infantry Division in Vietnam, the tactic was to put battalions of soldiers in the field to find platoons. Often the enemy had the upper hand, particularly if he found our infantry first. At best, these were “fair” fights at the tactical level. But Depuy understood that the American Army could not afford fair fights. The losses were simply too great.

My research shows that in the past 50 years, more than 70 percent of all com-



*"...the Army has been transforming for 50 years from a 'big-war' Army into one shaped to fight limited, firepower-intensive wars."*

bat deaths in close engagements were suffered by maneuver forces who were seeking to *find* the enemy. In Vietnam, General DePuy began to "find" the enemy with the smallest possible maneuver force—squads or platoons—and then "fix" the enemy's location without getting inside the lethal area of his organic small arms. Next, maneuver or firepower "flushed" the enemy out to be "finished" with killing firepower.

In a limited liability war where casualties have become our strategic center of gravity, we simply cannot afford bloody close engagements any more. We must achieve our objective quickly because the longer a war lasts and the more casualties we sustain, the fewer the options we have to maintain the initiative.

My research revealed that in wars of limited liability, 81 percent of soldiers killed were infantrymen; if you add combat pilots, both fighter pilots and Army aviators, the figure is 94 percent. So, if the Army wants to maintain strategic flexibility by moderating the loss of human life and if the greatest source of combat deaths has been maneuver forces, specifically infantrymen, then we must achieve our tactical and operational objectives while minimizing the loss of our infantry forces. Being aggressive in the close fight may win tactical skirmishes, but we will lose the battle, campaign or war because, ultimately, casualties will erode our strategic dominance and drive us to compromise.

Another fact: historically in limited liability wars, most Americans killed in combat were killed by rudimentary weapons; the greatest killer of Americans on the battlefield is the mortar. A distant second is automatic weapons. Mines are a very distant third. I think the historical pattern will continue: Most Americans killed in combat will die from the effects of simple weapons while facing an enemy fighting on equal terms in the close fight. That was true for the Russians in Afghanistan, and it is true for the Israelis today. One of the ironies today is that a B-2 bomber can fly 8,000 miles to destroy a building with one

bomb from a safe distance, yet a platoon under mortar fire is relatively helpless.

**Q** *What about the enemy who adapts the way he fights to lessen the killing effects of firepower?*

**A** Until recently, that was a real tactical problem. An adaptive enemy could make it difficult to deliver enough killing power to win, resulting in a stalemate—stalemate means attrition, attrition means excessive casualties and excessive casualties mean we pull out. So the goal of an enemy facing Americans in future combat is not to beat the Americans in a maneuver fight, but to avoid losing by positioning himself in such way that obviates the effects of our killing firepower. The Serbs, with their dispersed formations, false targets, concealment and movement of only small bodies of troops, showed us that even an unsophisticated enemy is beginning to catch on.

But precision fires are revolutionizing warfare and will make the changes to our doctrine work. The artillery of the future must be able to fulfill its obligation as the principal killer in the close fight by accelerating the lethality it delivers to the battlefield without increasing weight or bulk. Precision munitions will allow us to do that.

It's important to note that aerial-delivered precision cannot do the job against a dispersed enemy with a will to fight and sacrifice. He simply will present too many targets to find and kill with very expensive aerial weapons.

So the artillery must assume the mantle of precision in future conflicts. But right now, our firepower system is too bulky. About 62 percent of the weight of an armored division (94,000 tons) in Operation Desert Storm was artillery, including the stuff to haul it, protect it, maintain it—but most of the weight was in munitions.

The only way to keep our firepower system from becoming so heavy and ungainly that we restrict the ability of our infantry to maneuver is to increase the killing power per ton of weight we

can deliver to the battlefield by at least an order of magnitude.

If the future FA rocket or gun has the ability to fire precision projectiles in great profusion, the doctrine that governs their use will change fundamentally. Our firing units probably will be arrayed across the battlefield in pairs rather than in battalions. The doctrine would emphasize area coverage rather than linearity and mass. The possibilities are enormous and beneficial to the way our Army fights.

But real precision requires more than just precision munitions. We also must be able to sense and track the enemy with great precision. In past wars, the errors that caused the greatest waste of ammunition—whether delivered by air, ground or from naval gunfire—was in identifying and tracking targets with precision. The average target location error for a forward observer [FO] in Vietnam was 250 meters. The average target location error for air-delivered ordnance was well over 1,000 meters.

Our experience in past wars tells us that, regretfully, initial fires delivered to support close engagements were relatively ineffective, which will be unacceptable in future wars. The need for adjustment gives the enemy time to avoid at least some of the effects of the killing firepower. As we all know from the JMENS [joint munitions effectiveness] tables, the amount of artillery required to kill the enemy goes up geometrically when the enemy goes to ground or disperses.

After we find the enemy precisely, we have to deliver firepower quickly to engage him before he can move, disperse or go to ground. Unfortunately, during the last 50 years, the time needed to engage targets with both air- and ground-delivered ordnance has increased rather than decreased.

For example, in the European Theater of Operations in 1944, the average time it took to engage a close support target in an adjust fire mission was four and a half minutes. In Korea, it took the same time (after the firepower system was built up in the spring of 1951). In Vietnam, it took 11 minutes, and the delivery of massed missions in Desert Storm took an average of 55 minutes. These times are generally consistent with the FA's experiences at the NTC [National Training Center, Fort Irwin, California].



The reasons for this increase in mission time are varied and complex. Generally, fear of fratricide and the increased layering and automation of air and ground fire support systems are responsible. Also as a rule, the more expensive the munition, the longer it takes to deliver it using today's technology and doctrine.

By the way, this is not just an Army problem. In the European Theater of Operations in 1944 and 1945, a pre-planned air mission cycle was about 18 hours. In Korea and Vietnam, the cycle took 24 hours. At the operational level in Desert Storm, the ATO [air tasking order] cycle was extended to 72 hours.

After we find the enemy precisely and have the system in place to engage him rapidly, we must kill him with precision. Never in the history of warfare has the advantage on the battlefield increased so tremendously as with precision munitions.

With precision munitions, the PK [probability of kill], whether the munitions are air- or ground-delivered, has increased by a factor of 200—an unprecedented advantage. Yet, today, only aerial platforms have the capability to deliver precision munitions in great numbers. The ballistic error for munitions dropped by the Air Force in Korea and Vietnam was well over 2,000 meters. Now it is less than 10 meters.

The artillery, for the most part, is still an area fire weapon and will remain so into the foreseeable future unless the Army increases its funding for the development and fielding of precision munitions. For the Army's success in future wars, the artillery is *obligated* to proliferate precision.

An adaptive enemy gone to ground and dispersed into small increments only can be engaged effectively with cheap tactical precision weapons. Only the artillery can deliver cheap, timely and discrete precision killing power.

Further, we need to push the authority for the terminal phase of engaging the enemy with precision fires down to the lowest possible level—virtually to every maneuver unit on the battlefield. Everyone in close proximity to the enemy must become an FO.

**Q** *Why not let the Air Force, Navy or even our ATACMS [Army tactical missile system] stand off and deliver precision fires?*

**A** No amount of technology can overcome the Laws of Newtonian Physics. Limiting the time of flight probably will be our greatest challenge in killing future targets with precision fires, particularly moving targets. Air Force precision works well against fixed, strategic targets. But distant fires are simply incapable of supporting a tactical mission, particularly against targets that move.

For precision fires to be effective, we must significantly shorten the time required to sense, track and engage the target. Experience in past wars tells us that if it takes more than about a minute and one-half, even a precision weapons will not be able to destroy moving targets reliably. The longer the distance a round must travel to get to its target on a fluid battlefield, the more likely an adaptive enemy will be able to determine ways to maneuver under American firepower and survive.

**Q** *What is your advice to today's transforming Army?*

**A** First the fire support system must be so devoid of friction and so joint that any maneuver commander calling for precision fires will immediately receive the effects he needs from the optimum system, whether its ground-, air- or sea-delivered or from the Army, Navy, Air Force or Marines.

We need to develop precision munitions and stop planning to haul 62,000 tons of artillery stuff per division into a theater. Instead of thinking about a battalion of artillery firing tens of thousands of rounds, we must think in terms of pairs of artillery guns linked to very sophisticated aerial and ground sensors that will guarantee one round, one kill.

If our objective maneuver force is going to be as light and flexible as we postulate, then we must allow most of the massive killing power to be delivered from outside the tactical range of an enemy's weapons. Otherwise, we are back to the pre-Depuy days when fire fights were even matches.

The role of the fire support system will change in the future. In, say, 20 years, artillerymen will be less deliverers of firepower and the eyes of the system and more the coordinators and integrators of fires. In all probability, the most difficult task will be to assimilate all the battlefield information flooding into the

fire support system and translate that into decisions about when, and how to deliver what effects on which targets with great timeliness and precision.

Going back to World War II, every time a layer of decision making is imposed on the fire support system, it adds eight minutes to the effects delivery time. If a corps artillery decides to fire ATACMS or a corps TOT [time-on-target], you add an average of eight minutes for every layer of decision making down to the battery level. So the minimum time it takes to deliver a corp TOT is 40 to 50 minutes. The solution is to flatten the system—streamline the decision-making process. The secret is to "touch" the mission only once.

**Q** *What message would you like to send Field Artillerymen stationed around the world?*

**A** You have tremendous responsibility. In this new American style of war I have described, the principal engine of physical destruction is going to be the firepower system.

As we learned in Korea, Vietnam, Desert Storm and Kosovo, an adaptive enemy who disperses cannot be destroyed from the air alone. You, Field Artillerymen, are guardians of the fire support system and are responsible for preserving the lives of close combat soldiers engaged in the tactical fight.



Major General (Retired) Robert H. Scales, Jr., is a Historian and was Commandant of the Army War College, Carlisle Barracks, Pennsylvania, before he retired from the Army in 2000. Currently, he is the CEO of Walden University, Bonita Springs, Florida. While in the Army, he was the Deputy Chief of Staff for Doctrine in the Training and Doctrine Command, Fort Monroe, Virginia. He also served as Assistant Division Commander of the 2d Infantry Division in Korea and Director of the Operation Desert Storm Study Group for the Office of the Chief of Staff of the Army and primary author of *Certain Victory*. He commanded the FA Training Center, Fort Sill; and four batteries, two in Vietnam. Among his articles and four books, he wrote *Firepower in Limited War and Three Paradoxes: An Essay on the Future of Land Warfare*, due out this fall (Rowman and Littlefield Publishers, Inc.). General Scales holds a Ph.D. in History from Duke University.

# Joint Fires in the East African Campaign

By Major Peter J. Williams, Royal Canadian Artillery

Current military thinking increasingly emphasizes “jointness” with leaders required to employ manoeuvrist principles and “think outside the box.” Some hold the view that these are relatively new developments—or at least have come to prominence only since 1945.

A study of a little known campaign in the First World War, far from the morass of the Western Front, puts this popular myth to rest. The innovative use of naval guns as land-based artillery in the 1914 East African Campaign is an example of joint fires that dispels the myth. One German commander, separated from his superiors by vast distances of time and space, was left with the freedom of action to prosecute a campaign in which he *never* was defeated, even though the British enemy consistently outnumbered his force. He was an artilleryman.

**The Theatre of Operations.** Before the outbreak of war in 1914, Germany had several African colonies: Cameroon, Togo, German South-West Africa (in the area of modern Namibia) and German East Africa (in the area of modern Tanzania). This article primarily is concerned with the latter. Germany was ceded these areas as part of the 1885 Congo Act between Germany, France, Britain and Belgium. A free-trade

A 105-mm gun from the German ship *Königsberg* captured by the British at Dar es Salaam.



## First Place



zone was established between the African colonies of the treaty signatories.

More importantly, the colonies agreed that during wartime, they would remain neutral. From the outbreak of war, the belligerent parties would have to refrain from hostilities in the neutralized territories and from using them as a base for warlike operations.<sup>1</sup>

German East Africa was vast, encompassing an area larger than France and Germany combined, a total of 384,000 miles.<sup>2</sup> A 3000-foot high plateau dominated its center. The northeast, toward British East Africa (modern Kenya) is primarily savannah with abundant wildlife. Mount Kilimanjaro, the highest mountain

in the region, is in this area. Equatorial lands ring Lake Victoria, while the south is mainly highland. The campaign was fought mostly in typical “bush” country, ranging from open parkland to dense forests.

In many ways the theatre was a soldier’s nightmare. One combatant described it as follows: “It’s almost impossible for those unacquainted with German East Africa to realize the physical, transport and supply difficulties of the advance over this magnificent country of unrivalled scenery and fertility consisting of great mountain systems alternating with huge plains...the malaria mosquito everywhere...everywhere belts infested with the deadly tsetse fly which make an end of animal transport. In the rainy seasons, which occupy about half the year, the country becomes a swamp and military movements become impracticable.”<sup>3</sup>

Indeed, nature proved as much a bane to military operations as the enemy. In the disastrous British engagement at Tanga in 1915, African bees helped rout their invading Indian troops and also put a German machine gun out of commission.<sup>4</sup>

In 1914, the population of German East Africa was approximately eight million, mostly made up of the 53 native tribes. The white population was mainly German settlers and numbered 5,336.<sup>5</sup>

**German Forces.** To protect their interests, the Germans had garrisons in their colonies. In German East Africa, this was the *Schutztruppe* (Protective Force) of 216 Europeans, 2,540 natives (known as Askaris) and 45 European police. In 1914, the *Schutztruppe* was organized into 14 independent companies, each consisting of three platoons of 60 men per platoon. At its wartime height, the *Schutztruppe* never exceeded 3,000 Europeans and 11,000 Askari.

Each company had German officers and two to four machine guns. Rifles were mainly of the 1871 pattern and fired black powder, a great disadvantage in the close fighting to come.<sup>6</sup>

The *Schutztruppe* artillery firepower also was limited: 56 small-calibre, obsolete guns.<sup>7</sup> Two of the pieces dated back to 1873.

**The German Commander.** In 1914, Colonel Paul von Lettow-Vorbeck, aged 45, commanded the *Schutztruppe*. Originally trained as an artillery officer, he also had served with a marine battalion. Although he was nominally the senior commander, the Governor of German East Africa, Dr. Schnee, was the *de facto* commander-in-chief of the colonial armed forces.

While Dr. Schnee hoped to keep his territory neutral in the forthcoming war in accordance with the 1885 treaty, von Lettow-Vorbeck believed this was not the best course of action for Germany. Realizing where the British center of gravity lay, he summarized his philosophy as follows: "My view was that we would best protect our colony by threatening the enemy in his own territory. We could very effectively tackle him at a sensitive point, the Uganda Railway."<sup>8</sup>

In a letter to Governor Schnee, he further stated his case: "We have it in our power to hinder the enemy by sheltering our navy in its campaign against enemy transports and by keeping as many troops as possible pinned down in Africa. The *Schutztruppe*, under my command is ready to do anything in its power to help win the war."<sup>9</sup>

Realizing he was at the end of a long supply line from Germany and that most resources would be devoted to the European theatre, von Lettow-Vorbeck knew his only hope of success lay in



(Courtesy of the Bundesarchiv, Koblenz)

Colonel Paul von Lettow-Vorbeck commanded the *Schutztruppe*.

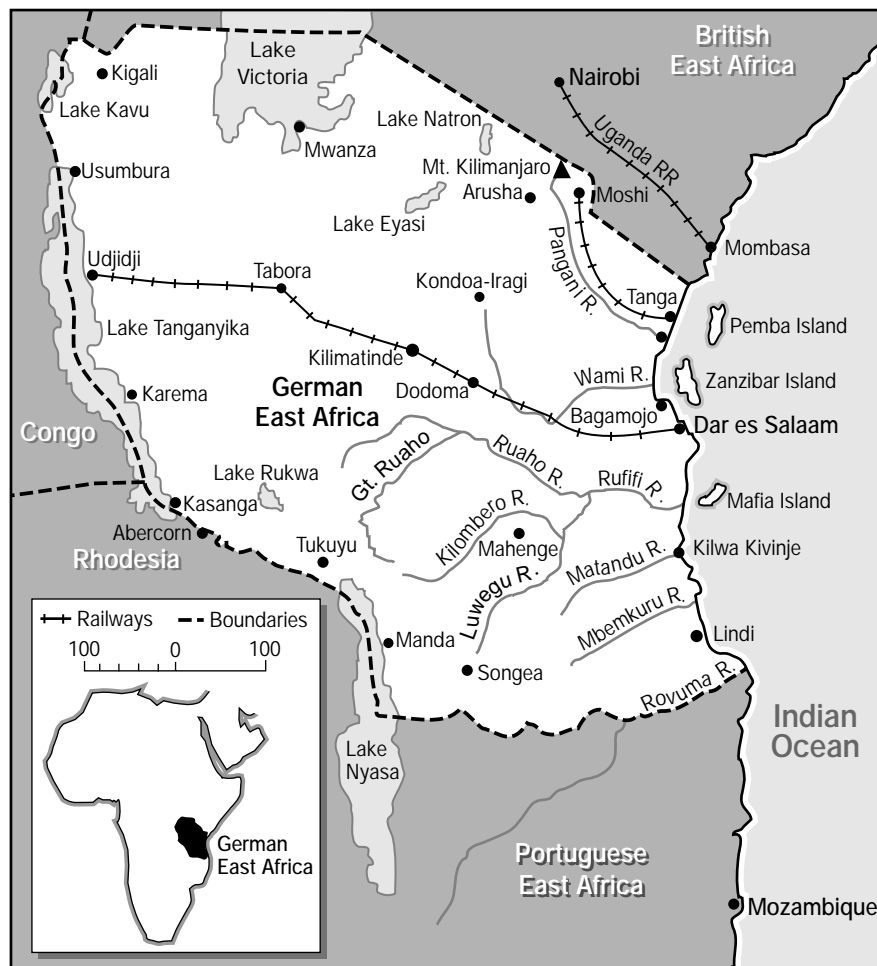
skillfully conducting a guerilla campaign. This was directed at vital points, such as the Uganda Railway, the main British supply line between Nairobi and the port of Mombasa.

His campaign was a masterstroke of guerilla warfare. It was also one of the harshest campaigns with von Lettow-Vorbeck admitting that on occasion, "A wounded man was relieved of his gun, shot through the head and left to the lions, hyenas or the vultures."<sup>10</sup>

**The Königsberg.** It was into such a theatre that the German light cruiser *Seine Majestät Schiff* or SMS (translated as His Majesty's Ship) *Königsberg* made her voyage into destiny. Neither her crew nor von Lettow-Vorbeck could possibly realize the impact she would have on one of the most successful guerilla campaigns of the 20th century.

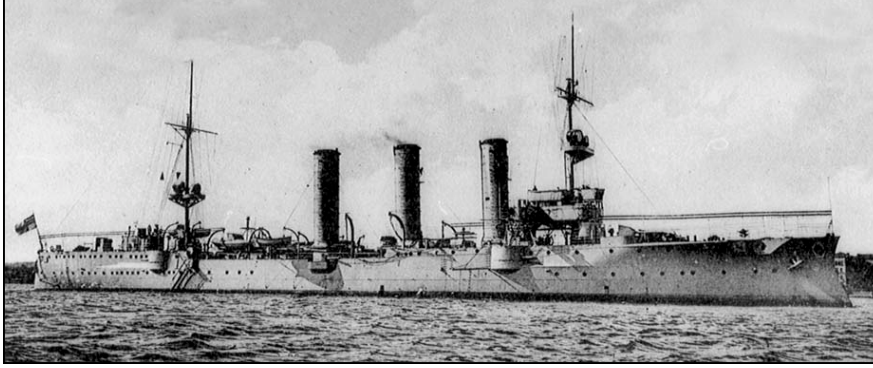
Built in 1905, the coal-powered *Königsberg* displaced 3,400 tons and had a crew of 320. Her captain since April 1914 was *Fregattenkapitän* (Commander) Max Loof. At best speed, she could make 24 knots and was faster than any Royal Navy vessel she encountered.

This vessel was a particularly welcome asset that proved invaluable as a commerce raider, attacking allied shipping lanes. Her armament consisted of



German East African Colony, 1914





SMS Königsberg (Courtesy of the German Maritime Museum, Bremerhaven)

two torpedo tubes and 10 105-mm (4.1-inch) guns, the latter having a range of 12,700 yards.<sup>11</sup>

The *Königsberg* originally had been sent to German East Africa as part of a colonial exhibition to be held in the colony's capital, Dar es Salaam. She arrived in port in June 1914, two months before the outbreak of war. Up to this point, the German naval presence in the area had been rather unimpressive, and the arrival of the new cruiser meant that an older ship, the gunboat *Geier*, could be detached to lower priority duties with the Far Eastern Squadron under Admiral Graf von Spee.<sup>12</sup>

With war imminent, the *Königsberg* did not linger long in port where she would be vulnerable to Royal Navy attacks. She departed the colonial capital at the end of July.

**War in East Africa.** War was declared on 5 August 1914. Almost immediately, the *Königsberg* established her reputation as a serious threat to Allied supply lines to India and the Far East. The next day, she captured the British steamer *City of Winchester*, the first such vessel to be captured by a German man o' war in the conflict.<sup>13</sup> But the British had not yet seen the worst.

In a daring raid on a British anchorage at Zanzibar in September 1914, the *Königsberg* attacked and sank the *HMS Pegasus*. In many ways it was an unequal contest: the British ship was 17 years old and much slower and less heavily armed than her German adversary. In the first victory by a German cruiser against a Royal Navy counterpart, *Pegasus* was sunk with no damage to the *Königsberg* or injury to her crew.

The British recovered the four-inch guns of the *Pegasus* from her wreckage, mounted them on improvised carriages and drew them by Packard trucks, thus providing the British land forces "instant" artillery.<sup>14</sup> (The British were as poorly provided with war materiel as their German counterparts.)

**The Land Campaign.** The East African campaign began poorly for the British. The Western Front was seen as the

decisive theatre, and East Africa was relegated to the status of a sideshow. Certainly, Allied commanders in East Africa could not expect reinforcements.

Poor intelligence, low morale and troops of dubious quality did not help the British in the disastrous rout during their attempted landings at Tanga in 1915, which ultimately were aborted. As one British officer remarked later, "The chaotic state of affairs here is heartbreaking. No reserve, no discipline, lack of courage in leaders, thousands of unreliable troops and no offensive spirit. I wish to heaven I could get out of it all and fight in the trenches."<sup>15</sup>

After a series of reverses, Lieutenant-General Jan C. Smuts, a South African, was appointed Commander-in-Chief of the Imperial Forces in East Africa in early 1916. These forces numbered approximately 27,500 and had 71 pieces of artillery and 123 machine guns. A lawyer by background, Smuts had commanded successfully against the British in the Boer War (1899-1902) and conducted a successful campaign against the Germans in South-West Africa in 1914.

**Sink the Königsberg.** By April 1915, with the defeat of von Spee's squadron at the Battle of the Falklands and the destruction of the German raider *SMS Emden*, the *Königsberg* was the only German surface vessel deployed outside the North Sea, and as such, posed a grave threat to British commerce routes. Her destruction became paramount.

To that end, British naval headquarters issued the following order: "The Admiralty have ordered [the cruisers] *Chatham*, *Dartmouth* and *Weymouth* to act as a detached and separate squadron... to be exclusively employed hunting *Königsberg*, and direct that on no account are ships to be diverted from their sole object, namely the capture of *Königsberg*."<sup>16</sup>

By that time, the *Königsberg* had taken refuge in the Rufiji River Delta south of Dar es Salaam to escape the British and take on boiler repairs as there was no convenient friendly port available. German supply ships attempted to replenish

her twice. Although both ships were sunk, enough supplies of coal, weapons and ammunition were recovered to maintain the *Königsberg* as a threat.

At one point, two battleships, 10 cruisers and 12 lesser ships of the Royal Navy were searching for the *Königsberg*.<sup>17</sup> British efforts to destroy the *Königsberg* were hampered by the fact that the Rufiji River was too shallow for many Royal Navy deep draught vessels. The only British ships capable of negotiating the river were two monitors, the *HMS Mersey* and *HMS Severn*.

The two monitors originally had been destined for the Brazilian Navy but luckily had been put into British service in 1914. These vessels, each armed with one 128-mm and two 152-mm guns, drew only five feet of water. They quickly were dispatched from Britain, arriving off East Africa by June 1915.

Working in concert with seaplanes, which adjusted the fire of their guns, the two ships launched a series of attacks on the cornered *Königsberg*. In the process, the valiant raider destroyed one of the seaplanes, but she was engaged in an unequal struggle. After suffering extensive damage, Commander Loof ordered his ship destroyed with a torpedo head and her guns thrown over the side on 11 July 1915.<sup>18</sup>

"Destroyed but not beaten..." Thus began the report Loof wrote after the destruction of his ship. For his valiant efforts he was awarded the Iron Cross, First Class, and was promoted to *Kapitän zur See* (Captain of the Sea). The other members of the crew received the Iron Cross, Second Class.

Lieutenant-Commander Schönfeld, a retired German naval officer and plantation owner in German East Africa, conceived a bold plan that was to bring immortal fame to the guns and the crew of *Königsberg*. He suggested they salvage her guns for von Lettow-Vorbeck's forces to use on land.

So under the noses of the Royal Navy that failed to interdict the salvage operations, the Germans retrieved the 10 105-mm guns from the bottom of the Rufiji River, transported them more than 124 miles to Dar es Salaam (via some of Schönfeld's plantation vehicles) and mounted them on gun carriages by mid-August.<sup>19</sup> Employing this simple bit of ingenuity, the Germans expanded and modernized the *Schutztruppe* artillery holdings. In the process, they added 180 men from the *Königsberg* to von Lettow-Vorbeck's force. Indeed, as the

British Admiralty admitted, it was “a priceless acquisition.”<sup>20</sup>

The guns of *Königsberg* were dispersed around German East Africa: five went to Dar es Salaam for the defence of the port; two to Tanga north of the capital to repel any repeat Allied landing attempts there; two to the port of Ujiji on Lake Tanganyika at the western end of the railway from Dar es Salaam; and one to Mwanza on Lake Victoria.<sup>21</sup>

In addition to the ammunition salvaged from the *Königsberg* and her supply ships, ammunition was manufactured in Dar es Salaam.<sup>22</sup>

Those members of the ship’s company not tasked to act as gun crews were formed into the “*Königsberg* Company” and deployed in the south and the southwest of the colony. The company was commanded by Loof’s First Officer, *Kapitän-Leutnant* (Lieutenant-Commander) Georg Koch.

The *Königsberg* guns did not see action until March 1916 in fighting around Moshi on the border with British East Africa. One of the guns repelled several British attacks. As part of von Lettow-Vorbeck’s strategy to fight a guerilla campaign, German forces could not become involved in pitched battles. In this instance, the *Königsberg* gun was destroyed before it could be captured.<sup>23</sup>

In further fighting in the same area, British commanders paid tribute to the German naval gunners who had employed their guns so skillfully: “The enemy’s positions were well chosen. In addition to the 4.1 inch (105-mm) gun to the south of the [River] Ruwu, which when it was not directed on the Mounted Brigade, as turned on the attacking infantry, there was a second 4.1-inch gun mounted on a railway track, some distance south of the river which kept up a continuous fire on the dust caused by the advancing infantry and later by the vehicles working in rear of the advancing troops.”<sup>24</sup>

Von Lettow-Vorbeck remarked on the same action, “It may be assumed that part of the severe casualties, which the English stated to have amounted on this day to several hundred among the South African Europeans alone, were caused by this gun.”<sup>25</sup>

*The Allies Close In.* When General Smuts took command of the Allied effort, the Allies’ fortune started to take a turn for the better. The Belgians conducted an offensive against the *Schutztruppe* from their own colony to the northeast. With the two railways in

German East Africa now threatened, one gun under the command of Lieutenant-Commander Schönfeld was deployed to cover Tabora along the railway. Nevertheless, the Allied offensive gained enough momentum to gain control of two-thirds of the German colony by the end of July 1916.

At this stage, nine *Königsberg* guns remained: five in Dar es Salaam, two at Ujiji, one at Mwanza and one in the Burungi mountains.<sup>26</sup>

By August, the British landings at Dar es Salaam reduced the number of guns to four. At the last minute, Loof removed one of the remaining guns defending the port.

The *Königsberg* guns performed sterling service in helping to defend the capital. For example, while under the command of Lieutenant Wenig, the guns conducted shoot-and-scoot tactics to deceive the enemy into believing the Germans had many more guns than they did.

By this time, von Lettow-Vorbeck’s forces had been severely depleted but not defeated. In addition to the four *Königsberg* guns, his forces had 16 smaller field guns and 73 machine guns and numbered 100 Europeans and 7,300 Askari.<sup>27</sup> Von Lettow-Vorbeck maintained confidence, however, that his strategy was correct. When referring to Smuts’ call for his surrender, von Lettow-Vorbeck said the call demonstrated that “...he [Smuts] had reached the end of his resources.”<sup>28</sup>

To maintain freedom of action, von Lettow-Vorbeck realized he must keep his own supply lines open. British landings south of Dar es Salaam near Kibata in September provided the opportunity to draw more Allied forces away from the critical northern railways. Employing a *Königsberg* gun and another field gun, he fired 300 rounds against the British at Kibata. He achieved his goal, commenting later that, “Our vigorous actions at Kibata forced him [the British] to move from Kilwa against us and to leave the rest of the country and our supply system in peace.”<sup>29</sup>

For his efforts in tying down the Imperial Forces, von Lettow-Vorbeck was awarded Germany’s highest decoration, the *Pour le Mérite* (the “Blue Max”) in 1916.

*The Portuguese Factor.* While von Lettow-Vorbeck believed he held the Imperial Forces at bay, in March 1916 a new consideration arose with the Portugal’s entry into the war. The Portuguese declared war on Germany, perhaps hoping to cash in on British gains and citing supposedly “numerous barbarous acts” committed by German troops on Portuguese East African soil. Hoping to gain territory on the border with the German colony, lands the Portuguese had long coveted, their hopes for a speedy victory were quickly dashed.

The Portuguese invaders crossed the River Rovuma on the border and were routed near Lindi in actions somewhat reminiscent of the abortive British landings at Tanga in 1915. Again, one of the *Königsberg* guns played a central role. It was part of a force that included three Askari companies as well as two European companies, all under Loof’s command. “The Portuguese were severely defeated on the 28th of November, mainly by gunfire from a *Königsberg* gun, and scattered into the jungle, leaving to the Germans four 76-mm mountain guns and seven machine guns with much ammunition.”<sup>30</sup>

This action was typical of the way in which the Germans fought in East Africa. The *Schutztruppe* conducted a guerilla campaign expecting no supplies or reinforcements from Germany and holding to the higher intent that they should continue to draw Allied resources away from more decisive theatres. By the end of the year, only three *Königsberg* guns remained; the other guns had been destroyed or overrun after first being rendered inoperable.<sup>31</sup>

By early 1917, the entire German East African coast from Tanga and Dar es



A 105-mm gun from the *Königsberg* mounted on a static carriage for the defence of Mwanza. (Courtesy of the Imperial War Museum, London)

Salaam south to Lundi was in British hands. The Imperial Forces expanded westward into the interior.

In August, the Germans, taking advantage of the interior lines, capitalized on their previous success and harassed the British at Lindi with one of the *Königsberg* guns.

Von Lettow-Vorbeck, who had been promoted to major general in June, commented on this action, "The exact location of his trenches gave us the advantage of being able to get the range for the 10.5 centimeter gun of the *Königsberg*, which

was with Wahle's force. This was also done with good results; at any rate the enemy eventually evacuated his trenches on the following day and retired."<sup>32</sup>

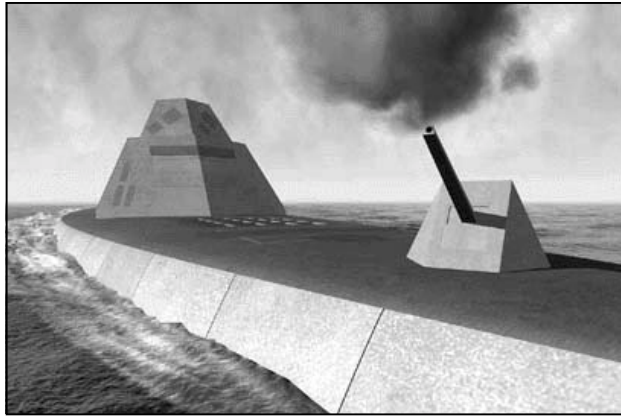
Knowing he must preserve his own force while tying down the Allies, von Lettow-Vorbeck invaded Portuguese East Africa in October with a force that included the *Königsberg's* last gun.<sup>33</sup> Lieutenant Wenig, who had employed the guns so well at Lindi, commanded the invasion force. The force included 300 whites, 1,700 Askaris and 3,000 carriers.

The foray into Portuguese territory provided a treasure of weapons and supplies for von Lettow-Vorbeck's forces, including modern rifles. As he reported, "...[we] were able to discard our 1871 pattern rifles almost entirely."<sup>34</sup>

Sadly, Loof did not participate in the final year of battles because he surrendered with his force in November.

*The Final Year.* Buoyed by success, von Lettow-Vorbeck felt confident enough to continue the fight, sending forces back into German East Africa and, from thence, into Northern Rhodesia. For the final year, he continued to engage in hit-and-run tactics, constantly harrying the British who were never able to engage him in pitched, decisive battle.

On 11 November 1918, an armistice was proclaimed in Europe, ending hostilities. In East Africa, however, the Germans continued their fight against the Allies; von Lettow-Vorbeck only heard about the Armistice on 13 November. Ten days later at a ceremony in Abercorn, Northern Rhodesia, von Lettow-Vorbeck surrendered his force to the British. Special provisions had been made for his forces in the armistice document.



The US Navy plans to develop the DD-21 destroyer with a 155-mm advanced gun system (AGS), a program all fire support coordinators should follow with interest. (Courtesy of United Defense)

The final *Königsberg* gun under Lieutenant Wenig had been destroyed. His force numbered 135 Europeans, 1,168 Askaris, 1 Portuguese mountain gun, 37 machine guns and 1,168 rifles, all captured from the Allies.<sup>35</sup>

In a campaign where von Lettow-Vorbeck's forces never exceeded 12,000 men, the Allies had fielded some 300,000 men, including 137 generals.<sup>36</sup> The British never defeated von Lettow-Vorbeck. As he summarized, "Yet in spite of the enormously superior numbers at the disposal of the enemy, our small force, the rifle strength of which was only about 1,400 at the time of the armistice, had remained in the field, always ready for action and possessed of the highest determination."<sup>37</sup>

One writer commenting on the entire East African Campaign, analyzed Allied and German aims and results as follows: "The [Imperial] East African Force was brought into being and the campaign undertaken with the object of conquering German East Africa. In that it was successful. It was continued to bring about the destruction or capture of the remnants of German forces under General von Lettow. In that it was unsuccessful. It cannot be denied that von Lettow had achieved the end he had set himself to do."<sup>38</sup>

Fittingly, the *Schutztruppe* and *Königsberg* veterans were treated to a victory parade through the Brandenburg Gate in Berlin upon their return home in 1919. As one author referred to them, they were truly "the Germans who never lost."

**Lessons for Today.** Modern Field Artillerymen can learn several lessons for today.

*Thinking "Outside the Box."* When faced with the possibility of having to

give up the ship, as the *Königsberg's* crew in the Rufiji, perhaps many would be forgiven for thinking they had no further contribution to make to the war. Not so in the case of Lieutenant-Commander (Retired) Schönfeld, who immediately realized the value of the destroyed cruiser's guns to the German cause.

It was also ingenious when von Lettow-Vorbeck dispersed the guns across the entire colony, rather than concentrating them in one place. This achieved two aims. Dispersing the guns supported his guerilla strategy,

which emphasized hit-and-run, harassing attacks against potential weaknesses rather than standing for battles against a numerically superior enemy. The latter type of engagement was one the Germans could never hope to win—the type of engagement in which they probably would have lost all their artillery in the first battle.

Second, by spreading his artillery throughout the theatre of operations, von Lettow-Vorbeck often deceived the British as to the true size and strength of his forces, thus causing them to devote an inordinate amount of resources to their destruction. As General Smuts admitted, "The *Königsberg*, though destroyed, yet made her voice heard over that vast country, for her 10 big naval guns, pulled by teams of 400 stalwart natives each, accompanied the enemy armies in all directions, and with other naval guns and howitzers smuggled into the country made the enemy in many a fight, stronger in heavy artillery than we were."<sup>39</sup>

*Transparency of Fires.* Fires are becoming effects-based with less emphasis on the delivery platform. Recent US Army experiments with effects control centres (ECCs) have endorsed this concept.<sup>40</sup> Attaining the desired effects from a naval gun platform was certainly in the minds of those responsible for giving the guns of *Königsberg* a new life as land-based artillery.

Mounting the 16-inch guns of the now decommissioned *Iowa* Class battleships on land carriages is, perhaps, not the best way forward. But recent initiatives by the US Navy to develop the DD-21 *Zumwalt* Class land attack destroyer is a program all fire support coordinators should follow with interest.<sup>41</sup> Further, naval plans to develop a 155-mm advanced gun system (AGS) for the DD-



21 with a range of 100 nautical miles (182 kilometers), firing unitary and armour-defeating munitions, including dual-purpose improved conventional munitions (DPICM), are also of interest to the Army and Marine Corps.<sup>42</sup>

*Jointness as the Way Forward.* Hand-in-hand with effects-based fires comes the realization that joint forces will conduct future operations and provide the fires to support those operations. Admittedly, von Lettow-Vorbeck had little choice in employing the crew of the *Königsberg* as ground troops. But he recognized the crew's expertise in long-range, accurate fires and the high morale that comes from shared operational experience; he swiftly converted the sailors into a decisive element of the *Schutztruppe*. This could not have been easy, as Loof and von Lettow-Vorbeck did not always agree on tactical or strategic matters.

Today, inter-service rivalry often inhibits the adoption of a true spirit of "jointness" that will be required in future operations. The US Marine Corps (USMC), a force inherently joint by nature—Marines have their own aircraft and routinely work closely with the Navy—are thus well-placed for the future. The recent creation of the US Joint Forces Command (formerly US Atlantic Command) is a step in the right direction.

The United Kingdom has taken jointness to what one can argue is its ultimate

logical end by examining the possibility of using standard 155-mm modular-charge ammunition in a naval role.<sup>43</sup>

Redlegs everywhere must work together to develop joint—ultimately combined—fires tactics, techniques and procedures (TTP) of the future, keeping in mind it is the effects, *not the platforms*, that matters.

"*The future just ain't what it used to be.*"<sup>44</sup> Senior leaders in the USMC have predicted that future wars will be more the "stepchild of Chechnya" than the "son of Desert Storm."<sup>46</sup> Certainly, the operations in which our armed forces find themselves increasingly committed bear this out: the Balkans, Somalia, East Timor, Sierra Leone. Conflicts now are more of an internecine nature within states rather than "traditional" wars between nations. Moreover, these are actions in which the opposing forces are of a paramilitary or terrorist nature vice professional armies.

Just as von Lettow-Vorbeck's troops who, armed with expedient artillery, made themselves a force to be reckoned with in tropical Africa against a technologically superior force, so might the terrorist or paramilitary of the future give a Western digitized army more than "a run for its money." Such a low-tech force will operate in a new kind of jungle—increasingly urban—and conduct guerilla tactics with machine guns in the back of a pick up truck—operations similar to those in Somalia. In short, we must be

prepared to deal with the *Schutztruppe* and *Königsberg* guns of the future.

Joint fires and, for that matter, "lateral thinking" are not often associated with fire support during the First World War. The exploits of the *Königsberg* and her crew in support of German operations in East Africa provide a sterling example of the employment of joint fires in a campaign that was ultimately successful in its aims. Fire support coordinators should learn the lessons of history as we define the joint fires doctrine of the future.



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21. Hoyt, 163.
22. Crowe, 32.
23. Mosley, 128. Von Lettow-Vorbeck's orders to his commanders in such cases were to, "Harass, Kill, but, don't get caught!"
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39. Chatterton, 280.
40. The author has had the good fortune to participate in the future fires command and control (F<sup>2</sup>C) concept experimentation plan (CEP) at Fort Sill, Oklahoma, in October-November 2000, in which a fires and effects coordination cell (FECC) was exercised using surrogate situational awareness (SA) technology. The FECC was responsible for coordinating both lethal and non-lethal effects for an interim brigade combat team (IBCT) in small-scale contingencies (SSCs) as well as major theatre war (MTW) scenarios. Although one serial of the CEP remains to be run, the concept of the FECC was agreed by both maneuver commanders and fire supporters to be a highly worthwhile concept.
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# The German Kondor Legion A Firepower Force Package in Combat

By Major Prisco R. Hernandez, ARNG

*Under a punishing July sun, Feldwebel Schmidt peered through his field glasses at the black beetle-like form emerging from a cloud of dense red dust. "Target identified! Russian tank. Direction—2300 mils. Range—500 meters. Gunner, at-my-command. Ready—fire!"*

*Seconds later, the gun crew saw the bright orange fireball produced by the high-explosive (HE) round as it set off secondary explosions inside the thinly armored vehicle. Moments later, there was a loud concussive boom.*

*The crew of the German 88-mm gun maintained its standard—one shot, one kill. Soon, old "Gretchen" would have another white circle painted on her deadly gray barrel.*

*Observing the unfolding battle, the artillery crew cheered as they saw a pair of vulture-like Stuka dive-bombers scream down on their objective and release their deadly "eggs."*

*A familiar vignette from the Russian Front? Not exactly. This scene did not take place on the barren Russian steppes. It happened much earlier—on the dusty plains of Spain.*



The most notorious new airplane in the Spanish Civil War was the Ju-87 Stuka. The St. Andrew's crosses (like "Xs") identified it as a Kondor Legion aircraft.

From the moment the Nazis seized power in Germany, the government encouraged military innovation and technological experimentation. In some cases, German weapon's engineers were sent to other countries to engage in work that was impossible to do in Germany due to the restrictions of the Versailles Treaty, a development technique Germany had applied before.<sup>4</sup>

The arms buildup initiated by Hitler in violation of this treaty and the renewed militarization and radicalization of German society under the Nazis were ominous signs for the future. Among the products of this arms buildup were a new generation of fighters and fighter-bombers, including the Ju-87 Stuka dive-bomber; new tanks and motorized infantry carriers; and new artillery pieces.

*German Artillery.* Perhaps the most remarkable of the weapons employed in Spain was the 88-mm gun. Originally designed as an anti-aircraft gun, the 88-mm *Flugzeugabwehrkanone*, or 88-mm FLAK, proved to be one of the most versatile and effective artillery pieces in history. The original FLAK-18 had been introduced at the end of World War I with its design improved during the postwar years. The model that saw action in Spain was known as the 88-mm FLAK-36 because it was improved in 1936.

The Spanish Civil War of 1936-1939 remains one of the 20th century's least understood conflicts.<sup>1</sup> From our present perspective, it seems similar to many of the conflicts that have flared up since the end of the Cold War. It came as the result of ancient tensions within the social fabric of the country and was waged with barbaric ferocity.<sup>2</sup> As in more recent civil wars, such as in the Balkans, outside powers used the conflict as a proxy ideological war and as a test bed for new military technologies and tactics.

Such was the case in Germany's limited support of the Nationalists in the Spanish Civil War. The Germans provided the Nationalists the Kondor Legion, a unique unit organized with an emphasis on firepower—air and artillery. By analyzing the success and limitations of the Kondor Legion, we can learn a lot about tailoring firepower force packages for modern combat.

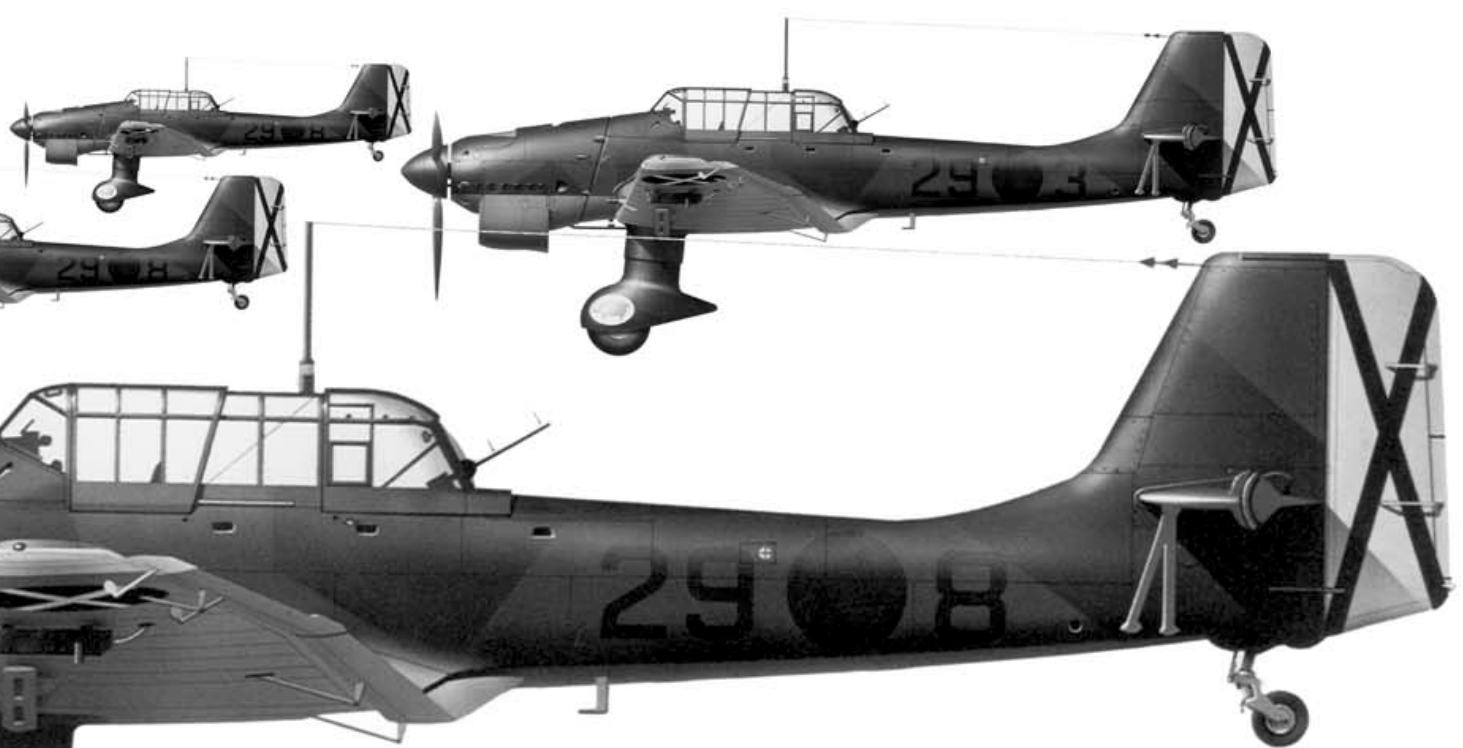
**Firepower Technology in the Spanish Civil War.** In 1936, the Germans, in

## Second Place



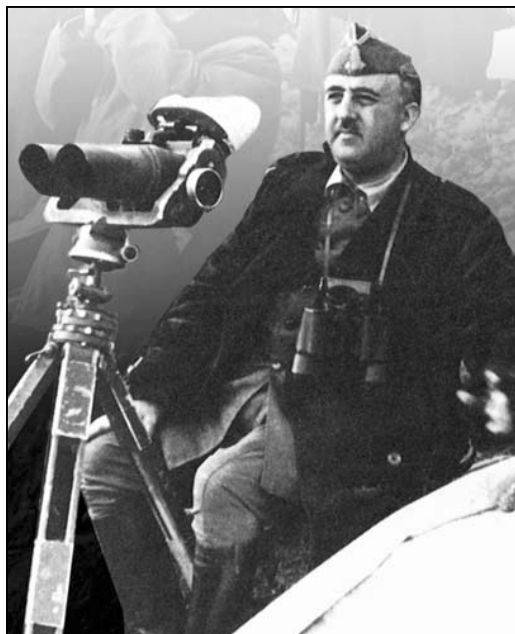
particular, were at the forefront of experimentation in the theory of mechanized and combined arms tactics.<sup>3</sup> German militarists seized the opportunity for the practical application of their new concepts of warfare offered by Hitler's limited intervention on behalf of the Spanish Nationalists led by General Francisco Franco.

Similarly, Russian communists offered assistance to the Republicans in the form of military advisers and materiel, including tanks and airplanes.



*The Kondor Legion.* This formation was a firepower force package, Hitler's contribution to the Spanish Nationalist cause. It began assembling clandestinely in July of 1936 with shipments of materiel and advisers. It culminated in the formation and commitment of the Kondor Legion, an ad hoc expeditionary combat force formed from the German *Luftwaffe*.<sup>5</sup>

The legion consisted of fighters, bombers and associated combat, combat support and combat service support assets. The legion included several batteries of 88-mm anti-aircraft guns to provide local defense for the airfields and supply



General Francisco Franco, leader of the Spanish Nationalists, observes his troops in 1938.

depots. All pilots, aircrews and soldiers belonged to the *Luftwaffe*, Germany's independent air service.<sup>6</sup>

The *Luftwaffe* was the perfect instrument for Hitler to try out his new military technologies. Although many of the *Wermacht* leaders were opposed to intervention in Spain, the *Luftwaffe* was commanded by Hermann Göring, Hitler's crony and true Nazi believer. In addition, the military instruments employed were primarily airplanes that promised to have a disproportionately great effect on the course of battle for a comparatively low likelihood of casualties, an important political consideration for Hitler at this stage of his career.<sup>7</sup>

The Kondor Legion was reorganized many times to accommodate new equipment and personnel changes. Initially, it consisted of a staff, a bomber group, a fighter group, a reconnaissance group, an anti-aircraft (FLAK) group, a seaplane squadron, a communications group and the necessary logistics support.

The FLAK group consisted initially of eight batteries: five 88-mm batteries of four guns each, two light batteries equipped with 120-mm and three 37-mm anti-aircraft guns and a training battery with all types of guns.<sup>8</sup> Later, it was reconfigured into four batteries of 88-mm, two of 20-mm and one of 37-mm guns.<sup>9</sup>

*German Fighters and Bombers.* The offensive striking power of the Kondor Legion resided in

its aircraft, primarily in its fighters and bombers. The fighters were designed to shoot down their enemy counterparts and maintain air superiority. They also were used in a secondary role to strafe convoys and trenches. The bombers were used to bomb operationally significant targets and provide close air support (CAS) to friendly ground forces.

In addition, the legion included light observation aircraft and transports. The light planes performed aerial reconnaissance, and artillery spotting and carried liaison officers and leaders around the battlefield.

As was the case with the artillery, the 1930's German aircraft industry worked largely through foreign firms and clandestine arrangements to foil the constraints of the Versailles Treaty, producing a number of innovative combat aircraft designs.<sup>10</sup>

Initially, the Kondor Legion had aircraft used in the severely curtailed *Luftwaffe* of the 1930s: the He-51, a biplane intended for use as a fighter, and the Ju-52 transport that was converted into as a bomber. The He-51 proved inferior to the French- and Russian-made aircraft used by the Republicans,<sup>11</sup> but it was successfully converted for use as a ground attack airplane.<sup>12</sup>

The balance of power in the air shifted to the German side with the fielding of the Bf-109 monoplane fighters. These airplanes proved to be far superior to their rivals.

Not only did the Germans acquire superior fighters, but they also developed superior tactics. Werner Molders pioneered the use of the *Rotte* and



*Schwarm* flight formations.<sup>13</sup> These ensured that each airplane operated in conjunction with a wingman for mutual protection. Adolf Galland and others perfected ground attack bombing and strafing techniques.<sup>14</sup>

The bombing squadrons had Ju-52 and He-111 bombers. The He-111 was sluggish and only suitable for high-altitude bombing, but the Ju-52 was fast and maneuverable and could provide close ground support without incurring prohibitive losses.<sup>15</sup>

However, the most notorious new airplane was the Ju-87 Stuka dive-bomber. This aircraft was designed for precision close support of ground operations using the dive-bombing technique.

The Spanish Civil War experience tended to validate the use of aircraft in lieu of conventional artillery. This was later attempted successfully on a massive scale in the Polish and French campaigns of World War II. However, against more formidable enemies with a superior air arm, the use of airpower as “flying artillery” proved grossly inadequate.<sup>16</sup>

An interesting and highly effective component of the legion was its seaplane group. The group, originally composed of a long-range (He-59) floatplane squadron and a short-range seaplane squadron, proved to be extremely effective against coastal targets and enemy ships. The squadrons sank 52 vessels and destroyed most of the enemy’s coastal communications networks.<sup>17</sup>

Also significant was the scouting and intelligence-gathering activity performed by the reconnaissance squadron. Even the highly secretive Republican preparations for the assault across

the Ebro River in 1938 were accurately identified by German aerial reconnaissance.<sup>18</sup>

*The 88-mm FLAK Non-Standard Missions.* As the legion went into action, its aircraft were committed to a wide variety of combat and support roles. The FLAK batteries initially were deployed in their originally intended roles to protect the airfields and logistics bases.

But soon, the nature of combat in Spain, with its wildly fluctuating front lines and the commitment of Russian armor, forced the Germans to employ the 88-mm guns in a direct fire mode against ground targets. In addition, the scarcity of Nationalist Spanish artillery and the general low proficiency of its crews soon placed new demands on the German FLAK gun as a direct support (DS) FA weapon.<sup>19</sup> Indeed, the 88-mm FLAK performed far more missions as an anti-tank and direct-fire Field Artillery gun than as an anti-aircraft gun. In a particularly intense period, German 88-mm guns were involved in 377 engagements. Of these, only 31 were against aircraft.<sup>20</sup>

The 88-mm FLAK was a powerful, flat trajectory weapon. The same characteristics that made it suitable for the anti-aircraft role served it well in the anti-tank role.<sup>21</sup>

However, it did not share the low profile and transportability of a properly designed anti-tank gun.<sup>22</sup> The 88-mm FLAK was mounted on a higher carriage that did not lend itself well to concealment and quick displacement. Also, it was served by a crew of eight—twice the number of the smaller anti-tank guns. All this created quite a large

visual signature, making concealment more difficult.

The *Luftwaffe* cannon crews had not been trained for their new roles, so they had to learn them as they fought. They had to develop a practical set of tactics, techniques and procedures (TTP) and come up with workable solutions for tactically employing their weapon as the situation demanded.

In many cases, the firepower and accuracy of the 88-mm FLAK made significant and sometimes decisive contributions to the ground battle. For example, in the fighting around Malaga in early 1937, a battery of 88-mm guns was DS to an infantry brigade. Despite a spell of bad weather that grounded the main bomber force of the legion, the assault succeeded, largely because of the concentrated and accurate fire of the supporting artillery.<sup>23</sup>

Another instance of the effectiveness of the 88-mm FLAK in the DS role occurred in the attack against the town of Ridabassella. Again, the firepower of the German 88 was essential to the Nationalists’ success.<sup>24</sup>

The use of the 88-mm FLAK in close proximity to the enemy made it vulnerable to ground attack. However, the gun and its crews proved to be formidable opponents, even in a defensive role. Inevitably, they suffered some casualties from infantry fire.<sup>25</sup> Casualties among the legion’s 88-mm FLAK batteries in the Spanish Civil War were second only to those among the bomber pilots.<sup>26</sup>

The FLAK also performed well in its intended role as anti-aircraft artillery. Of the 386 enemy aircraft shot down by the legion, 59 were downed by anti-aircraft fire. The FLAK downed most of them.<sup>27</sup>

Summing up the 88-mm FLAK’s combat performance in Spain, General Wolfram von Rittchhofen wrote, “The FLAK, to the horror of experts in Berlin, has consistently been used as the backbone of the ground artillery.”<sup>28</sup> Referring to its amazing versatility, he added, “We pulled the joke of sending a battery north of Guernica as coastal defense. If that battery would manage to sink a Red ship, the comedy of errors would really receive its crowning glory.”<sup>29</sup>

*Battlefield Employment.* Since the Kondor Legion was primarily employed in support of ground operations, the importance of good liaison with ground commanders was quickly recognized. Thus, air liaison officers with radios were assigned to ground formations and



The 88-mm FLAK performed far more missions as an anti-tank and direct-fire Field Artillery gun than as an anti-aircraft gun.



He-51 with fuel truck, 1937 Escalona, Spain. The success in maintenance and supply was largely due to the professionalism and hard work of the *Schwarzemensch*, the legion's mechanics and logisticians. Note the white St. Andrew's cross on the truck.

tasked to maintain close coordination between the supported ground force and the legion's command group. One advantage legion officers had was that most of them had originally been trained as infantry, artillery or cavalry officers, and they had a solid understanding of ground operations.<sup>30</sup>

However, radios were used only to coordinate among headquarters because there were no radio links between individual airplanes and ground observers. A pilot speeding over the battlefield at more than 200 miles per hour while dodging bullets and engaging the enemy would be hard pressed to identify friend from foe without direct communications. Out of dire necessity, the legion used field expedient techniques for tactical communications, such as marking front lines with colored cloths and flags.<sup>31</sup>

The Kondor Legion had a significant impact on ground operations whenever it was employed. An example is the Battle of Brunete. On 6 July 1937, the Republicans mounted a major attack with two converging forces against a thinly held portion of the Nationalist lines west of Madrid. The northern force was comprised of two infantry corps (15 brigades) supported by 130 artillery pieces, 70 tanks, 20 armored cars and more than 200 aircraft. The southern force had two divisions (18 brigades), 30 tanks and 20 armored cars.<sup>32</sup> This force of more than 80,000 men was the largest assembled in the war so far.

Upon learning of the attack and of the enemy's air superiority, General Franco notified General Hugo Sperrle, the le-

gion commander at the time, who immediately dispatched two bomber squadrons to the area and sent other units, including FLAK batteries, rapidly to the front.<sup>33</sup> The Germans quickly realized that the key to success lay in neutralizing Spanish FLAK batteries, especially their command centers.

These were identified by legion reconnaissance planes and attacked by swarms of He-51 ground attack aircraft.<sup>34</sup> The use of airplanes to suppress enemy air defenses (SEAD) was a risky mission better suited to the Field Artillery. However, in the Spanish Civil War, Field Artillery was in short supply, and skills, such as accurate targeting and coordination between observers and the guns, were often lacking. Only after enemy air defenses were destroyed or suppressed were German, Nationalist and Italian<sup>35</sup> fighters able to strafe the advancing Republican formations at will.

Despite the heavy use of airpower and tanks, the battle of Brunete was not a clean technological fight. At the sharp end, it was characterized by terrible disorder, incredibly cruel fighting, and often hand-to-hand combat in the suffocating heat of the Spanish summer.<sup>36</sup>

The Nationalist counterattack began on 24 July. Again, the Kondor Legion provided decisive firepower at the critical points. The German effort included artillery support from the 88-mm FLAK batteries against ground targets and at least three distinct waves of bombers to prepare the ground counterattack. Perhaps the most telling testimony to the legion's effectiveness came from the reports of enemy commanders, all of

whom agreed that the legion's air power was the single most influential factor in the defeat of their offensive effort.<sup>37</sup>

Another decisive use of the entire legion occurred in the Aragon offensive of 1938. This time, Nationalist forces were pushing against the final remnants of Republican strength in eastern Spain. The 88-mm FLAK batteries, in both their primary air defense role and as DS artillery, and legion bombers helped capture the strategically significant town of Belchite. In a memorable incident, the commander of a 88-mm FLAK battery brought two of his guns forward and destroyed a Republican Field Artillery battery that was holding the Nationalist infantry's advance.<sup>38</sup>

The most famous (or infamous) action involving the Kondor Legion was the bombing of the town of Guernica. Guernica was a center of Republican and Basque resistance. It lay next to a road junction and a bridge. This bridge presumably was the target of the German air raid, although it was not hit even once. Much ink has been spilled condemning the raid as an incident of Fascist brutality, and some have even accused the Anarchists of deliberately setting the town on fire to score a propaganda victory.<sup>39</sup>

In hindsight, it seems that the razing of Guernica occurred due to a mixture of error coupled with a stated disregard for civilian casualties.<sup>40</sup> In any case, it was a textbook illustration of air power used as a terror weapon against the civilian population. It put into small-scale practice the theories of the proponents of air power, such as Douhet and Mitchell.<sup>41</sup>

No amount of valor and tactical expertise will serve its purpose without a good program for sustaining operations. Conditions in Spain proved to be a major challenge for legion logisticians. The geography of the country, with its rugged mountains and extremes of temperature, as well as road and rail systems that were primitive by European standards, posed major transportation difficulties. The scarcity of fuel, especially for the aircraft, and the requisition and transportation of spare parts proved to be major challenges.

Success in maintenance and supply was largely due to the professionalism and hard work of the *Schwarzemensch*, the legion's mechanics and logisticians.<sup>42</sup> An interesting field-expedient innovation was the *Wohnzug*, a 12-car train that served as a moving headquarters and sleeping quarters.<sup>43</sup>





Germany sent approximately 15,000 men to fight with the Nationalists in Spain. The most important part of the German contribution was the Kondor Legion, 1936-1939.

Trucks, too, proved invaluable, especially as prime movers for the 88-mm FLAK. Without them, the legion's tactical and operational mobility would have been seriously impaired.

**After-Action Review (AAR).** There are many lessons to be learned from the experiences of the German Kondor Legion in Spain. These lessons may be especially relevant today because, in recent years, American national policymakers have been inclined to pursue the firepower force package option when use of force is deemed necessary but national interests are not immediately threatened. The firepower option and use of firepower in general have historically been associated with the American desire to avoid casualties. One example of a recent firepower force package was the plan to use Apache helicopters supported by SEAD from multiple-launch rocket launchers in the NATO incursion into Kosovo.

The German experience in Spain illustrates many of the advantages and limitations in the employment of firepower force packages.

*The Firepower Force Package must be employed as a unit.* The Kondor Legion was organized as a single unit with its own commander and staff.<sup>44</sup> Its main striking power resided in its aircraft. But the legion was supported by batteries of anti-aircraft artillery that, by force of circumstances, took on additional fire support missions, such as DS to infantry and anti-armor artillery. By careful commitment of its units in support of ground operations, the legion had a disproportionately great ef-

fect on the battlefield. Its firepower proved decisive in many engagements and battles.

However, despite being a firepower force, the Kondor Legion's battlefield effectiveness was not due mainly to its attriting the enemy, but rather to the dislocating effects of its fires. In other words, its effectiveness was not due so much to the "body count," but to the unexpected disconcerting effects of the overwhelming firepower. Indeed, the most notorious employment of firepower for purely attritional purposes occurred in the bombing of the city of Guernica. This action drew instant, scathing international condemnation and was of dubious military value.

*The firepower force package must have a centralized command, control, communications and intelligence (C<sup>3</sup>I) system and good liaison with the supported forces.* The Kondor Legion operated under a centralized and unified command structure and gathered its own intelligence. This structure allowed the combined arms force great flexibility and efficiency in the conduct of operations.

This level of integration is not possible in the US Army today. With the current branch structure and modified tables of organization and equipment (MTOEs), even a brigade combat team (BCT) lacks the inner cohesiveness that existed in the legion. Falling under the temporary operational control of (OPCON to) a larger unit or operating in the status of an attached relationship help, especially if they become habitual, but they do not reach the seamless level of the German organization.

The challenge of unified command becomes only more difficult when conducting joint operations. Liaison, too, is a critical function.

A firepower force package is most effective when employed in support of a combined arms ground force. In this support role, the firepower force functions as a combat multiplier to target critical enemy vulnerabilities. Only by maintaining continuous and timely liaison with friendly ground forces will the firepower force package be able to support the forces effectively.

*Effective Targeting is essential for success.* The targeting process is central to the effectiveness of a firepower force package. The present targeting model of *decide, detect, deliver and assess* is a useful guideline for employing decisive fires.

Firepower is always a limited resource. Therefore, it is imperative that fires be employed against high-payoff targets (HPTs). A firepower force package is most effective when used in general support of the maneuver force. In this way, the firepower force commander will have better control over his fires and can more effectively support the operational goals of the supported maneuver commander.

*The firepower force package must continue to train while in theater.* The success of the Kondor Legion was possible only by its continuous training while in an operational environment. Working with an immature doctrinal framework and constrained by the politically sensitive nature of their operations, the legion's officers and NCOs created and adjusted doctrine as well TTP, literally, "on the fly."

This was especially evident in the rapid development of TTP for employing the 88-mm FLAK gun in roles for which it was not designed and the development of the *Rotte* and *Schwarm* air attack formations.<sup>45</sup> (This approach was indicative of the German military's way of doing business throughout the entire first half of the 20th century.)

Such in-theater training has been conducted by the US Army in places such as Normandy, when the invention of the plow tank by a US Army sergeant led to platoon-level hedgerow breaching techniques. More recently, US mechanized units practiced breaching operations in-theater in preparation for Operation Desert Storm in the Gulf.

Constant review and evaluation of emerging TTP is critical and may mean



the difference between success and failure in combat. This validates the importance of the AAR and points toward its continued implementation in-theater. Furthermore, the lessons learned must be quickly disseminated throughout the force with a minimum of bureaucratic interference. The TTP developed in Spain were implemented immediately and did not wait for official approval from authorities in Germany. The Kondor Legion seized tactical opportunities as they occurred. If a weapons system or TTP proved effective, its use was rapidly approved and the lessons learned were quickly disseminated throughout the force. This, in turn, shaped the way in which the entire force would be employed in the future.

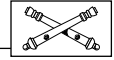
*Tactical air power is no substitute for Field Artillery, a lesson the Germans failed to appreciate in the relatively unsophisticated Spanish theater.* The lack of artillery forced them to use the He-51 and Stuka for DS and SEAD, roles in which Field Artillery is better suited. Similarly, they used the 88-mm FLAK as FA in a direct fire mode. The legion's success in Spain could not be duplicated a few years later when facing

the Soviet juggernaut and the combined arms might of the Allies in Europe.

*A firepower force package is most effective when used as a complement to, not a substitute for conventional ground forces—perhaps the greatest lesson of the German experience in Spain.* The success of the legion in Spain comes with a strategic-level caveat. It is tempting to pursue policy by use of a firepower force package; however, as was the case in Spain, a firepower force is most effective when used in support of ground maneuver forces.

**Conclusion.** Today's Field Artillery eagerly awaits the fielding of Crusader—the innovative howitzer system. At the same time, fire support doctrine is moving toward effects-oriented fires from a variety of platforms. All these developments represent a paradigm-shift, which requires the development of new TTP. As in the Germany of the 1930s, no one can predict with certainty how the new weapons and systems will perform in battle. Artillerymen and members of the combined arms team will have to be alert to the unsuspected possibilities that may result from new technologies.

It will take the efforts of all military professionals, whether in the field or in the weapons or combat development arena, to work together and apply the results of practical experience to fully realize the potential of the new systems and employ their firepower force packages to best advantage.



Major Prisco R. Hernandez, Army National Guard (ARNG), won Second Place in the US Field Artillery Association's 2001 History Writing Contest with this article. He is assigned as a Training Officer in the Training Section of the 4th Brigade, 75th Division, Training Support, Fort Sill, Oklahoma. Previously, he served as the S3 in the 1st Battalion, 120th Field Artillery, an M1098A5 howitzer battalion in direct support to the 32d Infantry Brigade of the Wisconsin ARNG. He also served as the Assistant S3 for this battalion, Commander of a mechanized infantry company, Executive Officer for both an infantry and anti-armor company, and Platoon Leader for both a rifle and anti-armor company. Major Hernandez holds a master's degree from Indiana University and a Ph.D. in Music History from the University of Wisconsin.

#### Endnotes:

1. The best one-volume history of the Spanish Civil War in English is Hugh Thomas, *The Spanish Civil War* (New York: Harper and Brothers, 1961).
2. The Spanish Civil War was fueled by fierce class and ideological hatreds. In many instances, entire villages were massacred by the winning side. Prisoners were routinely shot, and people associated with the enemy's ideology were summarily murdered. Peter Wyden, *The Passionate War* (New York: Simon and Schuster 1983).
3. Larry H. Addington, *Patterns of War Since the Eighteenth Century*, 2d Edition (Bloomington, Indiana: Indiana University Press, 1994), 178-180.
4. During the 1920s, the German weapons firm Krupp sent some gun designers to Sweden where they designed an 88-mm anti-aircraft gun. Production began in Germany in 1933. Ian V. Hogg, *The Guns\* 1939-45* (New York: Ballantine Books, 1970), 87.
5. The best study of German involvement in the Spanish Civil War and the Kondor Legion's contribution is Raymond L. Proctor, *Hitler's Luftwaffe in the Spanish Civil War* (Westport, Connecticut: Greenwood Press, 1983).
6. Even soldiers from the *Wehrmacht* were temporarily transferred to the *Luftwaffe* for service in Spain to avoid inter-service rivalry. Proctor, 42.
7. This is the same motivation for those who argue today for "air campaigns" in places such as the Balkans.
8. Proctor, 59.
9. *Ibid.*, 172.
10. For the early history of the *Luftwaffe*, see Hanfried Schliephake, *The Birth of the Luftwaffe\** (Chicago: Henry Regnery, 1971).
11. The Soviet I-15 and I-16, respectively called the *Rata* (Rat) and *Chato* (Snub-nosed) by the Spanish, were much superior to the He-51. Karl Ries, *The Luftwaffe: A Photographic Record 1919-1945* translated by Alex Vanags-Baginskis (Blue Ridge Summit, Pennsylvania: Aero, 1987), 44.
12. Proctor, 256.
13. *Ibid.* Werner Molders, the premier German ace in Spain, developed the *Rotte* formation in which two airplanes flew as a team, watching out for each other. The *Schwarm* combined two *Rotte* in what became known as the "finger-four formation." These formations are still the basis for fighter tactics in most of the world's air forces.
14. Adolf Galland, who became one of Germany's foremost aces and went on to command the *Luftwaffe* in Western France during WWII, spent his time in Spain flying the He-51. He developed ground attack tactics and his ground crews invented a liquid explosive bomb similar to napalm. See Raymond F. Toliver and Trevor J. Constable, *Fighter General: The Life of Adolf Galland* (Zephyr Cove, Nevada: AmPress Publishing, 1990), 46-52. Also Proctor, 165.
15. Toliver and Constable, 49-50.
16. Proctor, 257-258.
17. *Ibid.*, 253.
18. *Ibid.*, 217-218.
19. *Ibid.*, 96.
20. *Ibid.*, 259.
21. Hogg, 66.
22. The battlefield experiences of the Spanish campaign prompted some modifications in the design of the 88-mm FLAK. *Ibid.*, 88.
23. Proctor, 104.
24. *Ibid.*, 165.
25. *Ibid.*, 167.
26. The bomber pilots suffered 205 casualties; the FLAK batteries 173. Third on this list were the communications personnel with 131 casualties. *Ibid.*, 253.
27. *Ibid.*
28. General Richthofen's diary in Klaus A. Maier, *Guernica 26.4.1937 Die deutsche Intervention in Spanien und der "Fall Guernica,"* Appendix I, 1 May 1937 as quoted in Proctor, 134. This comment alludes to the fact that so far the 88-mm gun had been used in the anti-aircraft, anti-armor and direct support artillery roles and also would serve as coastal artillery.
29. *Ibid.*
30. *Ibid.*, 257.
31. Toliver and Constable, 50.
32. Proctor, 145.
33. *Ibid.*, 147.
34. *Ibid.*, 149.
35. The Italian dictator Benito Mussolini provided considerable military assistance to the Spanish Nationalist cause. For a summary of Italian aid to Franco, see Thomas, 632-635.
36. Proctor, 153.
37. *Ibid.*, 153.
38. *Ibid.*, 194.
39. See contrasting interpretations of the bombing of Guernica in Weyden, 349 and 358.
40. Wolfram von Richthofen, legion commander at the time, made his pilots follow a "golden rule": if a target could not be attacked, the bombs were to be dropped over enemy territory without regard for possible civilian casualties. He later wrote in his diary: "Guernica literally razed" and called the raid "a complete technical success." *Ibid.*, 352 and 359, respectively.
41. It is possible that the bombing of Guernica was a deliberate act designed to break the morale of the civilian population and perhaps test the air power theories of Giulio Douhet and Billy Mitchell. Addington, 185.
42. The *Schwarzenmensch*, literally "Black Men," was the term applied half affectionately, half in jest to the aircraft mechanics, the men who were constantly covered with oil, grease and dirt. Proctor, 171 and 177.
43. *Ibid.*, 81 and 173.
44. *Ibid.*, 252.
45. *Ibid.*, 256.
46. Michael D. Doubler, *Busting the Bocage: American Combined Arms Operations in France 6 June-31 July 1944\** (Leavenworth, Kansas: Combat Studies Institute, 1988), 34.

# “The Fatal Blunder of the Day”

## The Artillery Fight at the First Battle of Bull Run

By Captain Gary J. Schreckengost, ARNG

“It was at this time that McDowell [the Federal commander], committed, as I think, the fatal blunder of the day by ordering both Ricketts’ and Griffin’s batteries to cease firing and move across the turnpike to the top of Henry Hill....The short time required to effect the change enabled Beauregard [the Confederate commander] to arrange his new line of battle on the highest crest of the hill.”

Captain John D. Imboden  
Commander, Staunton (Virginia) Artillery  
*Battles and Leaders of the Civil War*, 1887, Vol. 1, 194.

Artillery, when used properly, often brings success in battle. In the first major battle of the American Civil War, the Battle of Bull Run (also referred to as Manassas), the Federals misused their artillery, disregarding their range advantage, while the Confederates employed sound artillery tactics. Had the Federals used their artillery properly, the Civil War very likely could have been over before it really got started. This battle teaches today’s soldiers a lot about the proper use of artillery: to maintain unity of command, take advantage of the capabilities of the weapons, achieve mass and synchronize fires and maneuver.

The Civil War took the US military establishment by surprise, especially its

## Third Place



artillery. In 1860, the year before the fratricidal conflict, the country was at peace and had no foreseeable enemy. The only threat, if any, came from non-compliant Indian tribes in the western

territories who were being policed by disparate regular army cavalry and infantry formations. And as for regular army artillery units, they were deployed mostly along the periphery of the United States as coastal or “heavy” artillery units. These units had large-caliber weapons in fixed positions that were protected by masonry walls, for example at Fort Sumter, South Carolina, or Fort Monroe, Virginia.

As for the state militias, artillery formations were almost non-existent, especially in the northern states. Pennsylvania, for example, had only one company of artillery, the Ringgold Light Artillery of Reading.<sup>1</sup>

When 11 Southern states seceded from the Union in the winter and spring of 1860-61 forming the Confederate States of America, the US Army had to reconfigure itself under the most harrowing of circumstances. The battle would call for light (or “field”) artillery formations to help suppress the rebellion, and only eight companies of regular light artillery existed. The heavy artillery formations, the norm of the regular army since the War of 1812, would not do. Because of this, most of the artillery units had to convert quickly and learn the special tactics and tech-

Reenactors of the Loyal Train of Artillery Chapter of the US Field Artillery Association



niques of light artillery. These included maneuvering across a battlespace, selecting a proper firing position while under fire and massing fires at the right time and place. In the pre-war heavy artillery, none of these tactics or techniques mattered as they were in fixed fortifications designed by military engineers.<sup>2</sup>

The general lack of knowledge about light artillery tactics and techniques is apparent when one sees how the opposing sides organized their armies for the Battle of Bull Run. Both sides simply sprinkled their artillery assets among the various infantry brigades as had been done during the Revolution when guns were less mobile. This made it very difficult to mass fires. Although Brigadier General Irvin McDowell's 35,000-man Federal "Army of Northeastern Virginia" and Brigadier General Pierre Gustave Toutant Beauregard's 30,000-man Confederate "Army of the Potomac" each had a nominal artillery chief, the chiefs had no real tactical authority.<sup>3</sup>

**The Federals and Confederates.** The Federal General McDowell organized his 35,000 men into five divisions with two to four brigades each (a total of 11 brigades) supported by 47 cannons of various makes and calibers. The cannons were organized into 10 companies, nine from the regular army and one from the Rhode Island State Militia. They included 16 3-inch Parrot rifles, two 3.67-inch and one 4.2-inch Parrot rifles, 4 4.62-inch M1841 field guns, 8 4.62-inch field howitzers and 12 James 3-inch bronze rifles.<sup>4</sup>

General P.G.T. Beauregard's 30,000-man Confederate Army of the Potomac (reinforced by Brigadier General Joe Johnston's Army of the Shenandoah) consisted of 12 brigades of infantry, 40 M1841 3.67-inch field guns, nine 3-inch ordnance rifles and four 4.62-inch field howitzers (53 total) organized into 12 firing units. Unlike McDowell's army, which consisted almost entirely of regular army artillery, the Confederate artillery was drawn exclusively from the volunteer militia.<sup>5</sup>

One final note on the ordnance of the opposing armies. While 51 percent of the Federals' guns were rifled, only 18 percent of the Confederates' were rifled. Although they only shot 3-inch bolts, rifled cannons had a stand-off range of 500 to 1,500 yards against comparable smooth bores, depending on the piece. The Parrot rifles had an effective range

of 2,500 yards if a target could be seen through the haze of battle; the 3-inch ordnance and James rifles had a range of 2,000 yards; and the 4.62-inch field howitzers and the M1857-Napoleon field guns had a range of 1,500 yards while the Mexican War-era M1841 field guns could reach out only to 1,000 yards. Although the Federals were slightly outnumbered in pieces on the field, if they maximized the range of their superior rifles appropriately, they easily should have been able to strip the Confederates of their artillery assets and control the battlespace. However, if the Federals moved to within easy range of the enemy's smooth bores, the rifles would be destroyed by the larger caliber pieces. As long as the Federals fired at a stand-off range as our M-1 tanks did during the Gulf War, their victory would be assured.<sup>6</sup>

**The First Battle of Bull Run.** On July 18, McDowell conducted his famous feint against Beauregard's right at Mitchell's and Blackburn's fords, just north of Manassas Junction along Bull Run Creek. Once the Federals determined that the Louisiana Creole had weakened his left to shore up his right, McDowell began to shift the bulk of his army to the north and west and attacked Beauregard's left soon after dawn on Sunday, 21 July 1861.<sup>7</sup>

While Colonel Israel Richardson's division was kept at Blackburn's and Mitchell's fords to fix the Confederates there, three divisions conducted an *en echelon* attack across Bull Run Creek. McDowell's main effort, two divisions commanded by Colonels David Hunter and Samuel Heintzelman, crossed Bull Run at Sudley Ford and drove down the Manassas Road, flanking Confederate Colonel Nathan Evans' dug-in brigade that was jealously guarding the Alexandria-Warrenton Pike at a stone bridge. (See the map on Page 24.) Once Evans was turned, Brigadier General Daniel Tyler was to force a crossing there with his division and link up with Hunter and Heintzelman; then the three divisions commanded by McDowell would drive south, dispersing the Rebel army and capturing Manassas Junction. The Federals then would continue on to Richmond to quell the "slaveholder's insurrection."<sup>8</sup>

The battle resumed soon after dawn on 21 July when skirmishers from Dan Tyler's division "made their appearance in line of battle, about 1,500 yards in front of [Evans'] position."<sup>9</sup> They



Brigadier General Irvin McDowell commanded the 35,000-man Federal Army of Northeastern Virginia.



Brigadier General Pierre Gustave Toutant Beauregard commanded the 30,000-man Confederate Army of the Potomac.

soon were followed by Second Lieutenant Peter Haines' mammoth 4.67-inch Parrot rifle from Company G, 1st US Artillery, and four guns from Captain James Carlisle's Company E, 2d US Artillery, which "commenced firing at intervals at different directions [in an effort to make] Evans show his position, which was still concealed."<sup>10</sup>

After three hours of firing and after being informed that an even larger Federal column was marching down the Sudley-Manassas Road, Evans deduced that the Federal attack to his front was merely a *ruse de guerre*. He boldly



decided to “quit his position and meet the enemy in his flank movement.”<sup>11</sup>

Evans informed Beauregard of his intentions and left only four companies from the 4th South Carolina and one platoon of brown-clad “Tiger Zouaves” from the 1st Louisiana Special Battalion to hold the stone bridge. He then ordered the rest of his brigade—10 and one-half companies of infantry, one troop of cavalry and one section of two M1841 4.62-inch howitzers from the Lynchburg (Virginia) Artillery, about 900 men total—toward the Sudley Road to try to stop or at least slow the advancing Federal column.<sup>12</sup>

Evans led his command to the foot of a low-lying ridge called “Matthews Hill.” He ordered his battalions to advance up the hill while he placed his artillery atop Buck Hill, about 200 yards to the rear, near Warrenton Pike. As Shanks’ infantry marched up the slope, however, Colonel Ambrose Burnside’s brigade, the lead element of McDowell’s column, approached the hill from the north. A fight for its crest ensued.<sup>13</sup>

As the battle progressed, Burnside’s 1st and 2d Rhode Island regiments drove Evans’ men back down the hill and into a low-lying thicket of pines. When the Federals continued their attack down the southern slope of Matthews Hill, Evans’ two howitzers, skillfully deployed behind the infantry atop Buck Hill, fired on the Rhode Islanders in

conjunction with his infantry. Private Sam English of the 2d Rhode Island remembered, “A perfect hail storm of bullets, round shot and shell was poured into us, tearing through the ranks and scattering death and confusion everywhere.” The well-directed fire stunned the Rhode Islanders, and they pulled back behind the slope to await reinforcements.<sup>14</sup>

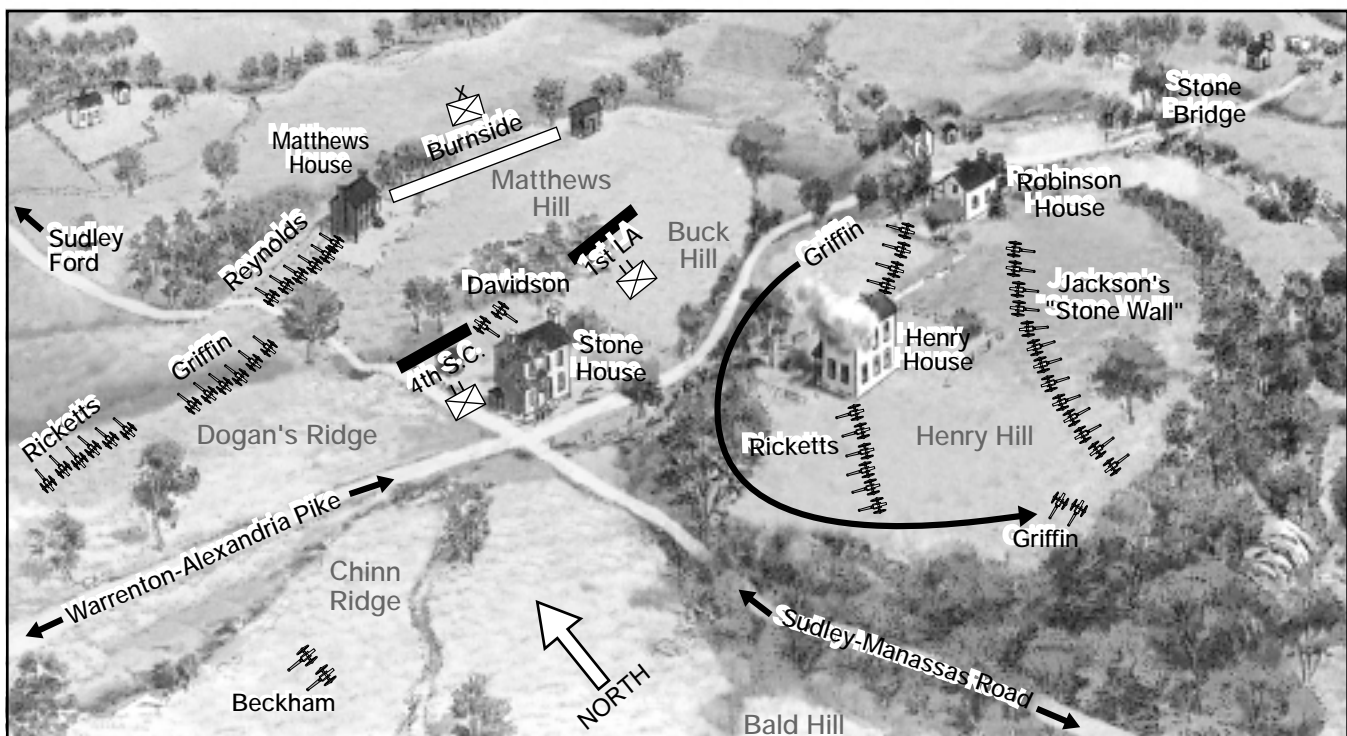
Colonel Hunter quickly ordered his next unit, Captain William Reynolds’ company of six 3.8-inch James bronze rifles, to deploy to the right of the 1st Rhode Island—instead of placing it on the west side of the road along Dogan’s Ridge where its long-range guns easily could have enfiladed Evans’ line. As the Rhode Island artilleryists wheeled their guns into battery, men and horses went down by the score. “It was rather nervous business for one who had never seen anything but ‘muster day’ encounters to find the balls flying round his head, perfectly regardless of whom they might hit,” admitted one artilleryist. For the next half-hour or so, the two lines of apprentice soldiers blazed away at each other at close range.<sup>15</sup>

By 1045, Matthews Hill was enveloped in thick smoke and visibility was cut to 50 yards. On Evans’ right, Major Roberdeau Wheat of the “Louisiana Tiger Battalion” decided to launch a counterattack to regain the crest of the hill before the Yankees garnered enough

strength and gumption to renew their attack down the hill. His target was the spot in which the 1st Rhode Island and Reynolds’ artillery companies were adjoined. If his Tigers could break through, they would knock the Rhode Islanders from the crest and allow the rest of Evans’ line to advance.<sup>16</sup>

However, when the Tigers exited a cornfield and advanced within 20 yards of the Union line, the Rhode Islanders gave “the most hideous scream” and raked them with musketry.<sup>17</sup> The frenzied point-blank fire was enough to stop the Louisianians and force them to retreat back down the hill and behind a pine thicket. If Wheat had launched his counterattack soon after the Rhode Islanders had crested the ridge, when Davidson’s guns were “tearing through the ranks and scattering death and confusion everywhere,” there’s little doubt he would have been successful.<sup>18</sup>

While Evans and Burnside continued to hammer away at each other, Confederate Brigadier General Barnard Bee and Colonel Francis Bartow deployed parts of their brigades about 1,000 yards south of Evans’ line along the northern slope of Henry Hill. They had four regiments of infantry and one company of light artillery, the latter commanded by Captain John D. Imboden. Unlike Colonel Hunter who simply ordered his Rhode Island artillery company to “go forward,” Bee conducted an outstand-



First Battle of Bull Run, 21 July 1861

*"...Jackson sensed the Federal commander's intent and expertly positioned most of his forces perpendicular to the Federal line along the northern and eastern slopes of Henry Hill. Eventually, his deployment became known as 'Jackson's Stone Wall.' "*

ing reconnaissance for Imboden's Staunton (Virginia) Artillery.<sup>19</sup>

Captain Imboden reported, "General Bee had chosen the best possible position for an artillery company on all that field. We were almost under cover by reason of a slight swell in the ground immediately in our front, and not 50 feet away. Our shot passed 6 inches above the surface of the ground on this 'swell' [his guns were in defilade], and the recoil ran the guns back to still lower ground, where as we loaded only the heads of my men were visible to the enemy....The first round or two from the enemy went high over us. Seeing this, General Bee directed us to fire low and ricochet our shot on the hard, smooth open field that sloped toward the Warrenton Turnpike in the valley between us. We did this and the effect was very destructive to the enemy."<sup>20</sup>

As Bee watched the desperate battle rage, he could see Evans was holding out against incredible odds. He rode down to the hard-pressed South Carolinian to urge him to fall back to Henry Hill, a stronger position. But Shanks, not recognizing Bee's authority (he was from Joe Johnston's Army of the Shenandoah, recently arrived by rail) balked and dared Bee to come down and support his men who were bravely holding their ground against the contemptible Yankees. Faced with Evans' naked but daring insubordination, Bee rode back up to Henry Hill and ordered his two regiments and one of Bartow's, the 8th Georgia, to take up a position to the left of the 4th South Carolina where Wheat's battalion was once deployed. "Here is the battle-field," Bee cried, "and we are in for it!"<sup>21</sup>

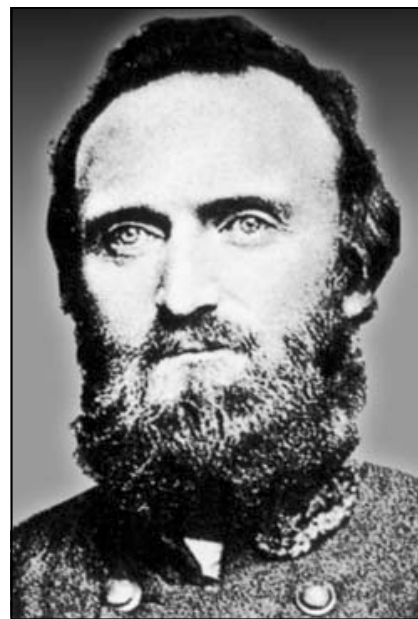
Bartow and Bee were quickly matched by the Federals, however. Two more brigades arrived on Matthews Hill and Dogan's Ridge with two companies of light artillery in support: Captain John Ricketts' Company I, 1st US Artillery (six rifled guns) and Captain Charles Griffin's Company D, 5th US Artillery, the "West Point Artillery" (four rifled

and two smoothbore guns). (Griffin's Company included Second Lieutenant Adelbert Ames, the first artilleryman to win the Medal of Honor; Ames won the medal while fighting in the First Battle of Bull Run.)<sup>22</sup> With 18 cannons now in the fight (many of which were firing into Bee's left flank from Dogan's Ridge), the Federals began to control the battlefield; the Confederates, faced with overwhelming numbers and firepower, were forced to retreat back to Henry Hill.<sup>23</sup>

As Bartow's, Bee's, and Evans' shattered brigades retreated south across the pike sometime after noon, Brigadier General Thomas Jackson approached Henry Hill from the south with an odd collection of nine regiments of infantry and 13 pieces of artillery. After a quick gaze across the pike from the northeastern edge of the grassy expanse, Jackson sensed the Federal commander's intent and expertly positioned most of his forces perpendicular to the Federal line along the northern and eastern slopes of Henry Hill. Eventually, his deployment became known as "Jackson's Stone Wall."<sup>24</sup>

Jackson weighted the left wing, which faced west across Henry Hill and consisted of the 13 cannons and six Virginia regiments. Like Bee before him, Jackson was an artillery officer from the old army who could position his cannons masterfully. He deployed the cannons just behind the crest of the eastern edge of Henry Hill where they could fire in defilade across the 300-yard plateau and, after they recoiled down the slope, could be reloaded under complete cover.

To shore up his right, Jackson positioned three regiments near the Robinson House to face the Federals who were massing just across the pike. Because these units were deployed in an exposed position, they came under intense artillery fire from the 18 Federal guns massed along the crest of Matthews Hill and Dogan's Ridge.<sup>25</sup> Jackson hoped the Federals would try to flank his exposed



Brigadier General Thomas Jackson

right by attacking it from the west, thus coming smack into his main line, including his artillery forces and six regiments of infantry. And if he could garner more forces, he would place them in a belt of trees along the southern edge of Henry Hill, so the Federals would walk into a giant "z-shaped" ambush. As Jackson completed his master plan, General Beauregard arrived on the hill, took over command and helped Bartow, Bee, and Evans consolidate their shattered brigades behind Jackson's Stone Wall.<sup>26</sup>

While Beauregard and Jackson were busily constructing a new line atop Henry Hill, Brigadier General McDowell, the Federal commander, also arrived on the field and conferred with his principal lieutenants atop Matthews Hill. Happy with how the battle had evolved thus far, he decided to press the attack south toward Manassas Junction with two regular companies of artillery, Ricketts' and Griffin's, and five relatively fresh brigades of infantry from Hunter's, Heintzelman's and Tyler's divisions. However, in directing the attack, McDowell curiously instructed his artillery chief, Major William Barry (2d Artillery), to order Ricketts and Griffin to move their guns from Dogan's Ridge to Henry Hill in advance of the infantry.<sup>27</sup>

Battles are won or lost on the turn of a singular event. At the Battle of Bull Run, this order was it.

Ricketts and Griffin received Barry's orders in disbelief. They both scanned the hill where they were ordered to go. It was just behind the area in which Imboden's guns had just been driven

*"...that in open ground, at 1,000 yards, a...battery of smooth guns...well handled, will in one hour discomfit double the number of the best rifles ever put in the field."*

off. Ricketts protested the order, stating the area was not only void of friendly infantry support, but also was within easy musket and canister range of the forming enemy line barely discernible through the haze. It would be better, he argued, if the long-range rifles were massed along Matthews Hill and Chinn Ridge, thus bringing converging fires onto the massing Confederates on Henry Hill. He further argued that the only advantage his 3-inch rifles had over the larger-mouthed smoothbores he faced was in their stand-off range. His guns easily could engage the Confederates at 2,000 yards while they could only return fire at 1,500 yards.<sup>28</sup>

After the war, Captain Imboden wrote that he concurred with Ricketts' insightful analysis. "It was at this time that McDowell committed, as I think, *the fatal blunder of the day*, by ordering both Ricketts' and Griffin's batteries to cease firing and move across the turnpike to the top of Henry Hill....The short time required to effect the change enabled Beauregard to arrange his new line of battle on the highest crest of the hill" [emphasis added by the author].<sup>29</sup>

In retrospect, it probably would have been better if Reynolds', Griffin's, and Ricketts' artillery companies had been massed on Matthews Hill and Chinn Ridge. There their long-range guns would have had Henry Hill in a cross fire. While this occurred, Tyler's division could have attacked up the east side of Henry Hill from stone bridge, Heintzelman's could have attacked directly south across the pike, and Porter's brigade, Hunter's division, could have swung around Chinn Ridge and hit the Confederates atop Henry Hill from the west. If this had been done, the Federals would have won the battle, Richmond most likely would have fallen, and the war may have ended right then.<sup>30</sup> But instead of heeding Ricketts' sensible arguments, Barry directed the two regular batteries to go forward, arguing "the general has ordered it."<sup>31</sup>

Disgusted, Ricketts and Griffin limbered their respective firing units and moved in advance of the infantry to the

western face of Henry Hill where they deployed on both sides of the house. There not 300 yards from 13 Confederate smoothbores, their nine rifles and two smoothbores met a horrifying fusillade of shot and shell from Jackson's well-placed gun line.

Captain Imboden later remarked, "I venture the opinion, after a good deal of observation during the war, that in open ground, at 1,000 yards, a...battery of smooth guns...well handled, will in one hour discomfit double the number of the best rifles ever put in the field."<sup>32</sup>

In the wake of his now-outgunned artillery, McDowell dispatched his battalion of marines from Porter's brigade and the 11th New York "Fire Zouaves" and the 1st Minnesota Regiment from Heintzelman's division to support the guns and begin the assault. The infantrymen and marines deployed to the right and rear of the cannons, shielded by the western slope of Henry Hill.<sup>33</sup>

Fifteen minutes later, at about 1430, Heintzelman ordered the infantrymen to move farther down the road and skirt the woods on the south side of the hill to roll up Beauregard's left flank. As the Minnesotans and Fire Zouaves moved onto the plateau, they were unexpectedly hit by musketry from Colonel Arthur Cummings' 33d Virginia Regiment from Jackson's brigade. In the confusing fight that followed, the

Federals broke and retreated back up Sudley Road. As they did so, two companies from Colonel James Ewell Brown "Jeb" Stuart's 1st Virginia Cavalry charged into their disorganized mass from the south, routing them and driving them farther up the road. The untried marines, seeing this conflagration developing to their right and rear, bolted as well, leaving Ricketts and Griffin unsupported.<sup>34</sup>

At this juncture, Second Lieutenant Charles Hazlett, one of Griffin's platoon leaders, suggested the exposed battery be withdrawn to Chinn Ridge, about 500 yards to the west. From there, the guns would not only be farther from the dangerous Confederate smoothbores, but also safe from an infantry counterattack. Although Griffin agreed with Hazlett in theory, he refused to withdraw. No matter how unsound, his orders were clear. He decided to maneuver his section of field guns to the place where the Fire Zouaves and the Minnesotans were driven off to enfilade the Confederate cannons that were wreaking havoc on his battery. Unlimbering atop a small knoll 150 yards from the Rebels, Griffin fired two salvos of solid shot into the Confederate gun line.

A few minutes later, Griffin noticed through the thick gray smoke a line of "dust-covered" infantry about 200 yards away heading toward his right rear. Correctly thinking the infantrymen were Confederates, the old regular promptly ordered his guns to swing to the right and switch to canister. At that time, Major Barry rode up to inform him the men below were advancing Federals from Heintzelman's division. Barry, therefore, ordered Griffin to change back to



The fatal blunder of the day was ordering both Ricketts' and Griffin's batteries to cease firing and move across the turnpike to the top of Henry Hill. (Reenactors of the Loyal Train of Artillery)



solid shot and continue his well-placed enfilade fire against the Rebel guns.

Again Griffin protested Barry's orders. "They are Confederates," Griffin argued, "as certain as the world, they are Confederates." Barry answered, "No *Captain*, they are your battery support!"<sup>35</sup>

After a few more tense moments, the unidentified infantry column moved to within 70 yards of Griffin's guns, fired a volley into the Federal artillerists and then charged up the slope. The attacking infantry were from the 33d Virginia and quickly overran the Federal cannons.

When the surviving members of the doomed platoon retreated back to the Henry House, Griffin asked Barry, "Do you think that was our support?" The artillery chief answered, "I was mistaken." "Yes," Griffin said, "you were mistaken all around."<sup>36</sup>

Soon after Griffin's smoothbores were captured, Colonel Alfred Wood's 14th New York State Militia Regiment, the "Red-Legged Devils" from Hunter's division, charged up from the Sudley-Manassas Road and slammed into the 33d Virginia's left, driving it back into the woods and retaking Griffin's cannons. The emboldened New Yorkers continued forward, intent on taking Beauregard's gun line in flank. As the New Yorkers advanced north across the front of the Confederate-held woods, Jackson's 4th and 27th Virginia regiments ripped several volleys into their right, charged them and force them to retreat behind Ricketts' battery. Again, Griffin's and Ricketts' guns were left unsupported.<sup>37</sup>

Beauregard seized this rare opportunity and ordered his entire line to advance at 1500 to drive the Federals from the hilltop. Elements from the 2d, 4th, 27th and 33d Virginia regiments from Jackson's brigade swept across the field toward Ricketts' battery. Simultaneously, the 49th Virginia, joined by the 2d Mississippi and the blue-clad 6th North Carolina Regiment, recaptured Griffin's field guns. After a brief fight the Confederates charged gallantly—all eight Federal pieces either fell to or were driven off by Beauregard's attacking infantry.<sup>38</sup>

In one fell swoop, McDowell lost his artillery assets.

This dramatic back-and-forth fighting across Henry Hill was caused in great measure by the misuse of artillery. If Barry had heeded Ricketts' advice and deployed his assets on Matthews Hill and Chinn Ridge, the Confederates could



Beckham's battery fired enfilading solid shot down the pressed Federal line and drove McDowell's forces from Henry Hill and, ultimately, from the field of battle.

not have retained Henry Hill. Instead, the two sides were embroiled in a costly but indecisive fight.

As for the Confederates, once McDowell made the mistake of sending Griffin's and Ricketts' batteries into Jackson's apportioned kill zone, Beauregard should have ordered at least some of his guns to move around the eastern face of Henry Hill and set up on Bald Hill. From that position, the Rebel gunners easily could have enfiladed the Federals with solid shot and unhinged their entire line.

At about 1600, Brigadier General Milledge Bonham's and Colonels Arnold Elzey's and Jubal Early's brigades arrived, after marching up the Manassas Road. They deployed atop Bald Hill and slammed into McDowell's right. Included in this force was First Lieutenant Robert Beckham's Culpeper (Virginia) Artillery that went into battery on the far left of the Confederates along Chinn Ridge. These forces tipped the scales against the Federals who were blocked on two sides by advancing Confederate infantry and well-placed Confederate artillery. Beckham's battery fired enfilading solid shot down the pressed Federal line and drove McDowell's forces from Henry Hill and, ultimately, from the field of battle.<sup>39</sup>

**Lessons Learned.** The use of artillery at the First Battle of Bull Run is highly instructive for modern-day Redlegs.

*Mass and synchronization on the battlefield achieve decisive results.* When mass and synchronization were achieved at Bull Run, decisive results followed. Good examples are when the

Federals drove Bartow, Bee and Evans from Matthews Hill and when Jackson was able to stop the Federal attack on Henry Hill.

Some examples illustrating the results when a force did not achieve mass and synchronize fires and maneuver are when Evans failed to follow up his repulse of Burnside on Matthews Hill and when McDowell committed the fatal blunder of the day in moving Ricketts and Griffin to Henry Hill. Correct artillery tactics called for several batteries to be concentrated on key terrain features to engage high-payoff targets, such as artillery units or approaching infantry columns.

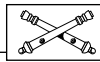
*We must understand and take advantage of the capabilities of our weapons systems.* Barry should have placed his rifles on Matthews Hill and Chinn Ridge where their longer range would have been more effective. From these places, the Confederates on Henry Hill would have been caught in a cross fire and suppressed, easily enabling McDowell's infantry brigades to collapse Jackson's Stone Wall.

*If artillery fires are properly applied and synchronized with maneuver, the force will control the battlespace—perhaps the most important lesson of the battle.* As such, we must clearly define our essential fire support tasks (EFSTs) and essential FA tasks (EFATs). If McDowell and Barry had developed clear "EFSTs" (e.g., suppress enemy units on Henry Hill) and if Barry had executed the related "EFATs" competently (e.g., placing batteries on Matthews

Hill and Dogan's and Chinn Ridges), then there would neither have been a fatal blunder nor a Stone Wall.

The lessons at Bull Run again show that artillery can be the preeminent battle system—the *King of Battle*. If we squander our assets, if we fail to understand the tactics of artillery and are unable to integrate and synchronize these battle-winning assets with maneuver, we will lose. Given advances in technology, our artillery officers must be prepared

to make the most of their artillery in the next war, or we will squander opportunities we could gain by artillery fires.



Captain Gary J. Schreckengost, Army National Guard (ARNG), won Third Place in the US Field Artillery Association's 2001 History Writing Contest with this article. He is the Targeting Officer for the 28th Infantry Division (Mechanized), Pennsylvania ARNG.

He also has served as the Executive Officer for B Company, 2d Battalion, 111th Infantry; Rifle Platoon Leader in the 1st Battalion, 112th Infantry; and Armor Crewman in the 1st Squadron, 104th Armored Cavalry Regiment, all in the 28th Infantry Division. Captain Schreckengost is a graduate of the Field Artillery Officer Advanced Course, Fort Sill, Oklahoma, and holds a Master of Arts in American Studies from Penn State University. He is a high school American History teacher in Lancaster County, Pennsylvania.

### Endnotes:

- Samuel Bates, *History of the Pennsylvania Volunteers in the War of the Rebellion* (Harrisburg, PA: 1885), 159. The Ringgold Light Artillery of Reading was named after Major General Zachary Taylor's intrepid artillery chief Major Samuel Ringgold, who was killed at the battle of Palo Alto in 1846.
- L. Van Loan Naisawald, *Grape and Canister: The Story of the Field Artillery of the Army of the Potomac 1861-65* (Mechanicsburg, PA: Stackpole Books, 1999), 23, 448. The eight light artillery companies were K and I, 1st US; A and M, 2d US; C and E, 3d US; and B and G, 4th US. Of these, four served under General McDowell at Bull Run; Captain John Ricketts Company I, 1st US, was the most senior.
- Ibid., 23; John Hennessy, *The First Battle of Manassas: An End to Innocence* (Lynchburg, VA: Howard Company, 1989), 4-8; JoAnna McDonald, *"We Shall Meet Again": The Battle of First Manassas (Bull Run), July 18-21, 1861* (Shippensburg, PA: White Mane Publishing, 1998), 8-19; and US War Department, *The War of the Rebellion: A Compilation of the Official Records of the Union and Confederate Armies, 1861-65* (Washington, DC: Government Publishing Office, 1880-1901), Volume 2, 345-46, 469-70, 481, 490.
- War Department Official Records, 2:308, 314, 345-6; and Editors, *Century Magazine*, "The Opposing Armies of the First Bull Run," *Battles and Leaders of the Civil War* (New York: The Century Company, 1887), Volume 1, 194.
- James Fry, "McDowell's Advance to Bull Run," *Battles and Leaders*, 1:175-205; McDonald, 13-15; and War Department Official Records, 2:186-87, 466. During the summer of 1861, the Confederates had two armies deployed across northern Virginia: Brigadier General Johnston's 9,400-man Army of the Shenandoah headquartered in Winchester and Brigadier General P.G.T. Beauregard's 23,000-man Army of the Potomac headquartered at Manassas. Johnston's army reinforced Beauregard's army, bringing the total on the field at the First Battle of Bull Run up to 30,000. Although Johnston was senior in rank at Bull Run, he allowed Beauregard to command the left wing that did most of the fighting on 21 July.
- Dean S. Thomas, *Cannons: An Introduction to Civil War Artillery* (Gettysburg, PA: Thomas Publications, 1985), 27-45.
- War Department Official Records 2:186-87, 305; Fry, *Battles and Leaders*, 1:179-83, 203; and McDonald, 10.
- Fry, *Battles and Leaders*, 1:183; War Department Official Records, 2:305; and Samuel Bates, *Martial Deeds of Pennsylvania* (Harrisburg, PA: 1885), 128.
- War Department Official Records, 2:490.
- G.P.T. Beauregard, "The First Battle of Bull Run," *Battles and Leaders*, 1:205.
- Beauregard, *Battles and Leaders*, 1:206.
- Beauregard, *Battles and Leaders*, 1:205-208; Hennessy, 6; War Department Official Records, 2:346, 361, 474-76, 490-95, 559-564; E.P. Alexander, *Military Memoirs of a Confederate* (New York: Da Capo Press, 1983), 30-31; and James M. Catlett and T.B. Warder, *Battle of Young's Branch, Manassas Plain, Fought July 21, 1861* (Richmond, VA: Enquirer Book and Job Press, 1862), 18.
- War Department Official Records 2:383, 395, 559-61; Elijah Hunt Rhodes, *All For the Union: A History of the 2nd Rhode Island Infantry in the War of the Great Rebellion* (Lincoln, NB: University of Nebraska Press, 1986), 26; and Roberdeau Wheat, "Report of Major C.R. Wheat, First Battalion Louisiana Volunteers, of the First Battle of Bull Run Virginia, July 21, 1861," *Supplement of the Official Records of the Union and Confederate Armies*, Part I, Volume 2 (Wilmington, NC: Broadfoot Publishing, 1992), 194.
- Hennessy, 51; War Department Official Records, 2:396-400, 559-61; and Rhodes, 26.
- Hennessy, 51; and War Department Official Records, 2:346, 395.
- War Department Official Records, 2:305, 396-400, 559-61; and Wheat, 2:194.
- Rhodes, 26.
- Beauregard, *Battles and Leaders*, 1:207; War Department Official Records, 2:305, 559-61; *Providence Evening Press*, 13 July 1861; and Rhodes, 26.
- Hennessy, 66-67; and John Imboden, "Incidents of the First Bull Run," *Battles and Leaders*, 1:234.
- Ibid.
- Fry, *Battles and Leaders*, 1:185; Beauregard, *Battles and Leaders*, 1:210; Imboden, *Battles and Leaders*, 1:234; and War Department Official Records, 2:515-16, 552, 559, 566-67. The 7th Georgia remained on Henry Hill and, with Hampton's Legion, later covered the retreat of Bartow, Bee and Evans from Matthews Hill around the Robinson House.
- David T. Zabecki, "American Artillery and the Medal of Honor," *Field Artillery* (December 1987), 25-26.
- Fry, *Battles and Leaders*, 1:185; Beauregard, *Battles and Leaders*, 1:210; Imboden, *Battles and Leaders*, 1:234; and War Department Official Records, 2:515-16, 552, 559, 566-67. The West Point Artillery is the Army's oldest regular unit.
- Beauregard, *Battles and Leaders*, 1:210; McDonald, 76-78; and War Department Official Records 2:559-61. A West Point graduate and Mexican War veteran, Thomas Jackson was the artillery instructor at the Virginia Military Institute when his state seceded from the Union. His 1st Brigade, Army of the Shenandoah, consisted of the 2d, 4th, 5th, 7th, 27th and 33d Virginia regiments. He absorbed Hampton's Legion and the 8th and 49th Virginia regiments, Army of the Potomac, when he reached Henry Hill. His guns were from the Rockbridge and Governor Wise (Virginia) batteries, Army of the Shenandoah, and five guns from the Washington Artillery of New Orleans, Army of the Potomac. After the battle, "Stonewall" Jackson was promoted to major general and given command of the Valley District, Department of Northern Virginia.
- Beauregard, *Battles and Leaders*, 1:210; McDonald, 76-78; and War Department Official Records, 2:481, 515-16, 559-61, 552, 566-67.
- Fry, *Battles and Leaders*, 1:185; Beauregard, *Battles and Leaders*, 1: 210; and War Department Official Records, 2:481, 515-16, 552, 559, 566-67.
- Fry, *Battles and Leaders*, 1:186; Hennessy, 77-79; McDonald, 97; Naisawald, 10; and War Department Official Records, 2:346.
- Ibid.
- Imboden, *Battles and Leaders*, 1:234.
- Imboden, *Battles and Leaders*, 1:233-34; and Alexander, 35.
- Naisawald, 10.
- Imboden, *Battles and Leaders*, 1:134-35; Hennessy, 77-80; Naisawald, 10; and War Department Official Records, 346, 516.
- Ibid.
- Beauregard, *Battles and Leaders*, 1:212-13; and War Department Official Records, 2:384, 483.
- Hennessy, 83; McDonald, 107; and Naisawald, 10. Before the war, most of the uniformed militia units, North or South, were outfitted in gray. Some companies, like at least two from the 33d Virginia, however, wore dark blue frock coats to match the regulars. At the Battle of Bull Run, not only were both sides in blue and gray, but several regiments had companies with different uniforms (e.g., 1st Louisiana Special Battalion, 33d Virginia and 69th New York).
- Alexander, 39; Beauregard, *Battles and Leaders*, 1:212; Hennessy, 83-84; and McDonald, 107. Griffin was later promoted to major general and commanded a division of infantry in the Army of the Potomac.
- Beauregard, *Battles and Leaders*, 1:213; Hennessy, 97-100; and War Department Official Records, 2:346.
- Hennessy, 100-101; and McDonald, 119-29. During this melee, Captain Ricketts was wounded and captured. Released five months later, he was promoted to brigadier general and commanded a division of infantry in the Armies of the Rappahannock and Virginia that were commanded by Generals McDowell and Pope, respectively.
- New Orleans *Daily Delta*, 15 August 1861; Hennessy, 102-105; McDonald, 150-54; and War Department Official Records, 2:546-47.



"Did you know that 'Taps' was first sounded at Harrison's Landing, Virginia, in July 1862—over the grave of a corporal in 'A' of the 2nd Artillery? This battery became 'D' of the 3d Field Artillery. From that time the custom of sounding 'Taps' over a soldier's grave has continued. Lt. Col. George Ruhlen, FA"

The Field Artillery Journal, October 1943  
Vol. 33, No. 10, Page 722

## 2001 History Writing Contest Winners

**First Place-** "World War I: Joint Fires in the East African Campaign" by Major Peter J. Williams, Royal Canadian Artillery

**Second Place-** "Spanish Civil War: The German Kondor Legion, A Firepower Force Package in Combat" by Major Prisco R. Hernandez, ARNG

**Third Place-** "American Civil War: 'The Fatal Blunder Of the Day'-The Artillery Fight at the First Battle of Bull Run" by Captain Gary J. Schreckengost, ARNG

## Judges of the 2001 History Writing Contest

**Brigadier General David T. Zabecki** is the Deputy Chief of Army Reserve (Individual Mobilization Augmentee) at the Pentagon. He is the Editor of *Vietnam* magazine, and has been a Contributing Editor to *Military History* and *World War II* magazines. General Zabecki is the author of the book *Steel Wind: Colonel George Bruchmüller and the Birth of Modern Artillery*, an expansion of his 1990 First Place article for the US Field Artillery Association History Writing Contest, among the more than 300 articles he has written. He also is the Editor-in-Chief of the 1998 *Encyclopedia of World War II in Europe*. General Zabecki is an Assistant Professor of Military History with American Military University and holds a Master of Arts in History from Xavier University, Ohio.

**Lieutenant Colonel Frank J. Siltman** commands the 3d Battalion, 30th Field Artillery, part of the Training Command at Fort Sill, Oklahoma. In his previous job, he was the Brigade Fire Support Trainer at the National Training Center, Fort Irwin, California. He also served as an Assistant Professor of American History at the US Military Academy at West Point and holds a Master of Arts in American and Military History from the University of Illinois. He was a Contributing Author to the 1995 revision of *The West Point Atlas of American Wars* and has published several articles and book reviews. He is a graduate of the Command and General Staff College, Fort Leavenworth, Kansas.

**Major Thomas K. Hall** is the Professor of Military Science at Georgia Military College at Milledgeville. He holds a Master of Arts and Science in Military History from the Command and General Staff College at Fort Leavenworth. He won the 1999 US Field Artillery Association's History Writing Contest with the article "Confederate Redlegs at Shiloh: Swatting the Hornet's Nest." His previous assignment was as the Chief of the Multiple-Launch Rocket System (MLRS) Division of the Gunnery Department at the Field Artillery School, Fort Sill. Also at Fort Sill, he served as the Executive Officer of the 3d Battalion, 13th Field Artillery (MLRS) of the 214th Field Artillery Brigade, III Corps Artillery. Major Hall commanded Service Battery, 1st Battalion, 77th Field Artillery in the 194th Separate Armored Brigade at Fort Knox, Kentucky.

## Field Artillery Themes for 2002

Edition	Theme	Deadline
Sep-Oct	FA and Fire Support Doctrine	1 Jun 2001
Nov-Dec	Transforming the Force	1 Aug
Jan-Feb	Training XXI	1 Oct
Mar-Apr	Science & Technology for the FA	1 Dec
May-Jun	The FA NCO	1 Feb 2002
Jul-Aug	History	1 Feb: Contest* 1 Apr: Other
Sep-Oct	Close Support	1 Jun
Nov-Dec	Red Book—Annual Report	1 Aug

\*Due date for Contest submissions; all other articles due 1 April.

## 2002 History Writing Contest Rules

The US Field Artillery Association is sponsoring its 17th annual History Writing Contest with the winners' articles to be published in *Field Artillery* and the Association's version of the magazine, *FA Journal*. To compete, submit an original, unpublished manuscript on any historical perspective of Field Artillery or fire support by 1 February 2002. The Association will award \$300 for the First Place article, \$150 for Second and \$50 for Third. Selected Honorable Mention articles also may appear in *Field Artillery*. Civilians or military of all branches and services, including allies, are eligible to compete. You don't have to be a member of the Association.

Your submission should include (1) a double-spaced, typed manuscript of no more than 4,000 words with footnotes, (2) bibliography, (3) your comprehensive biography and (4) graphics (black and white or color photographs, maps, charts, etc.) to support your article. The article should include an analysis of lessons or concepts that apply to today's Redlegs—it should not just record history or document the details of an operation. Authors may draw from any historical period they choose.

A panel of three historians will judge the manuscripts without the authors' names. The panel will determine the winners based on the following criteria:

- Writing clarity (40%)
- Usefulness to Today's Redlegs (30%)
- Historical Accuracy (20%)
- Originality (10%)

By 1 February 2002, send the manuscript to the US Field Artillery Association, ATTN: History Contest, P.O. Box 33027, Fort Sill, Oklahoma 73503-0027 (FedEx to Building 758, McNair Road). For more information, call DSN 639-5121/6806 or commercial (580) 442-5121/6806 or email: famag@sill.army.mil.





# Observations of a [1946] Battery Commander

By Captain John J. Norris

This article is reprinted from the July 1946 *The Field Artillery Journal*, Vol. 36, No. 7, Pages 403-5. The note from the 1946 Editor, Colonel Devere Armstrong, introducing the article follows: *Nothing is quite so sobering or satisfying as the responsibility and privilege of commanding a battery of American soldiers. This young commander has learned quickly and well the immutable principles of leadership. Artillery-men, old and young, will benefit by reading his observations.*

**I** commanded a light artillery battery in an Infantry Division, which entered combat on the Western Front [Holland] on the 4th of November 1944. [Captain Norris commanded C Battery, 379th Field Artillery Battalion, 102nd Division, in combat, starting in November 1944 until Victory in Europe Day when his battery was on the Elbe River.] I joined this battery shortly after its activation and served as Assistant Executive, Executive, and Battery Commander. I had the opportunity of guiding the training of my organization and of watching the results of that training in combat. I now feel that I am prepared to make some observations, the veracity of which my experience has emphasized repeatedly. I shall discuss them under the headings of leadership, training, morale, discipline, standards, tactics—factors that determine success or failure in battle.

**Leadership.** Leadership in the American Army—especially at the level of the battery commander—is based on example. *Leadership based on example is the only means to guarantee respect*, without which leadership does not exist. Setting an example involves two things: first, the mental and physical ability to lead others; and secondly, the character and conscientious attention to duty which demands that the leader himself adhere strictly to the orders he issues.

The American soldier is intelligent. You cannot fool him. He demands two things of his officers: first, that they know their business and second, that

they exact obedience to orders. This is the proper approach to genuine goodwill and loyalty. To seek popularity outright by relaxing orders for fear of offending is one of the worst mistakes an officer can make. Men quickly sense this weakness.

Leadership is a *fair and square policy*. Treat all men alike; do not relax orders or favor any individual or any group. To practice favoritism is to put command on a personal basis. To do that is to lose the respect of all.

Leadership is *diplomacy*. One must learn to give orders in a manner that does not offend but inspires, does not accentuate the element of rank but elicits cooperation. The American soldier is a citizen of a free country who is giving the better years of his life to a duty demanded by his country. He wishes to sacrifice no more of his individuality and civil rights than are necessary. To be unnecessarily harsh and crude in giving orders is detrimental to the best interests of the purpose intended. This does not mean that a forceful manner is not required at times.

Leadership is *personal interest in your men*. Show them you are concerned [about] each one individually. It tends to relieve the feeling that is apt to grow among enlisted men that they are merely a group of underprivileged whom the officers enjoy ordering around.

Leadership is *psychology*. A commander must quickly sense the feelings of his men and readily grasp the remedy. He must pick up on misunderstandings of orders [and] dissatisfac-



tion with policies. He must single out the men who are discontented and work on them. Such men must be handled intelligently.

Leadership is *orientation*. Much of the unpleasantness of a distasteful order vanishes if the man understands the reason behind the order. Take pains to have your men understand your policies [and] prepare them in advance for orders you anticipate. Get them in the receptive frame of mind. Thorough understanding through orientation produces gratifying results.

Leadership is *versatility*. You must be the driving force when there is unpleasant work to be done, the “heel” that enforces the standards of discipline in garrison, the inspiration in battle [and] the priest to tend your men in sorrow. Each of these requires that you develop a wide understanding of life and the



105-mm howitzer crew in action during World War II.

psychology that governs the soldier's thought and emotion.

Leadership is *enthusiasm, energy, [and] initiative*. A commander must have these qualities to inspire those beneath him.

Leadership is *good judgment*. Daily there are decisions to be made that require good sound judgment. On the battlefield, a commander is frequently called upon to make up his mind quickly, but equally there are decisions involving policies and principles that demand more thought. An error in picking your leaders weakens your organization and calls for future unpleasantness.

Lastly, leadership is *the ability to "get along" with your associates*. Many officers have forced the Army to deny them the best use of their abilities because of their lack of effort to work with other members of a team. Teamwork,

cooperation, and coordination are essential to success in combat.

**Training.** It is my firm belief that the standard of success of a unit against the enemy is a direct function of the quality of training in the zone of the interior. True, it is frequently necessary to eliminate dead wood, to relieve officers and noncommissioned officers who lack the mental alertness, the physical stamina, moral courage, [and] the aggressiveness that leads to success in battle. But among the men you have trained will spring the vigorous, fresh leadership, which has been awaiting its chance.

In many ways the commander's greatest test comes in the training period. In spite of all, men will not understand the full reason behind orders given. Obviously, it is not the popular thing to correct a man for not wearing his steel helmet when there are no shells about.

But the firmer and more determined a commander carries out his training mission, the more he contributes to later combat success, particularly in the saving of lives. This does not mean that time should be spent unnecessarily, but it does mean that the time taken should be utilized in intensive work.

The commander must have the guts to do the right thing in the face of much opposition from those who are either shortsighted or less interested in their duty than he. Commanders who pushed training intelligently and relentlessly are deserving of greater credit than many who received credit for outstanding service to our country.

**Morale.** Morale is a factor which is created by circumstance. Morale is highest when there is much activity. Morale in our unit was highest in combat on the swift advances from the Roer to the Rhine [Rivers]. The men were occupied; each felt that he was contributing directly to the final victory. But during periods of inactivity, the soldier begins to think too much about his grievances and is inclined to become involved, hence require disciplinary action.

The first lesson toward maintaining high morale is the provision for keeping the men occupied. This may be done by various means, but must be done. [One means is to] provide as much recreational activity and variety as possible. The second is to provide the men with all conveniences that the situation will allow. In combat, this meant hot meals, lighting facilities, rest passes and wholehearted cooperation by the officers in an effort to think of ways to make life more livable.

A point of morale arises when a unit breaks away from combat and is placed into rest areas. A commander gradually must break his men once again into the idea of garrison life and the high standards that go with it. The American soldier naturally dislikes many things that go with garrison living, such as frequent inspections, police, [and] close order drill. But each commander knows that those things are necessary in order to maintain the discipline, health and general welfare of his unit. It is a challenge to a commander to use his tact, ingenuity, leadership, orientation and diplomacy to get these things rolling with the minimum harassing of his men and sacrifice to their morale.

**Discipline.** A matter of first importance to a commander, discipline must be kept high at all times. A commander

must always be on the alert to detect laxity in discipline. When the discipline becomes lax the unit is on the road down.

Discipline may be defined and is defined quite differently by different individuals. I have heard battery commanders say, "We don't salute, yet we have the best discipline in the division." I also have heard enlisted men call officers by their first names, as a general policy, when in combat. Common danger certainly draws men closer together, but I do not believe this is the correct approach to good discipline.

True, some officers do not need the Army Regulations and Courts Martial Manual to establish their authority. This is ideal, but even under these conditions, a commander makes a mistake to invite familiarity. It may work with one officer, but it does not work with all. Invariably some men will abuse the privilege; there is meaning in the adage "familiarity breeds contempt." A commander who has the spontaneous respect of all his men can easily insist and obtain the essentials of military courtesy, which always mark the disciplined unit.

In combat, then, discipline can be maintained by military courtesy applied practically and sensibly, but applied, and sanitary living. Insist constantly on personal cleanliness, clean clothes, sanitary quarters, haircuts, well-kept material, neatness and orderliness everywhere to the very limit the situation will permit.

Like training in general, if discipline is well-established in the zone of the interior, it will present no problem in combat. I seldom found it necessary to raise my voice overseas and used my battery punishment book only once.

The theory behind good discipline is to *catch the little things*. Never let them slip past you. If you do, you will soon have serious violations of orders on your hands, requiring unpleasant action that breeds bitterness and constitutes a detriment not only to the individual's record, but also to your organization.

Psychologically, a commander must know when to cease corrections to avoid harassing. He always must commend good work, be pleasant and show interest in the men, but never let the discipline slip. Keep those hats on straight, clothes buttoned. It keeps the men in the habit of obeying orders and the officers in the habit of performing their duty. Make corrections *right now*, when you observe the need. Strangely, perhaps, and most certainly, *good discipline* causes free men in uniform to fight

willingly with spirit, determination, initiative and success.

**Standard.** This is the factor that separates the superior officer from the average and the successful unit from the mediocre. The higher the standard, the more successful the unit. And it is the commanding officer who sets that standard and maintains it. *A unit is the measure of the man who commands it.*

The unit commander must have the proper conception of a high standard in order to pass it on to his officers and men. It is of first importance, of course, that the officers—the leaders—be instilled with a high standard. Effort is made to accomplish this very important purpose at Officer Training Schools, but there is not sufficient time there to inculcate ideals in addition to putting across the technical military knowledge that must be acquired in a limited time. Therefore, this responsibility of training junior officers devolves upon the commanding officer. Nothing is finer than for a young officer to have the right type of commander.

Units with high standards are easy to spot. It is generally true, moreover, that a unit whose standards are high along one particular line are universally high. And the level of success attained in combat reflects, almost universally, the standard attained in the training in the zone of interior.

Demand the highest standards in police, appearance, discipline, sanitation and training. Have a better outfit in every way than the next one down the line. *To have a winning team is to have pride, high morale and spirit.* In war we must win; we cannot tie or lose. And it is high standards, more than anything else, which results in the pride, the spirit and the determination that bring victory on the battlefield.

**Tactics and Miscellaneous.** The battery commander is seldom concerned with tactics. But here are some ideas that I have found worthwhile.

*Be aggressive.* This factor is vital to success. The commander must be aggressive himself, and he must instill this spirit into each and every man and officer.

*Plan ahead.* Never go into any undertaking poorly prepared. As far as possible, detailed reconnaissance and plans should be made to ensure the coordination of all elements of one's command. Above all, do not take anything for granted. I repeat: do not take anything for granted. *There is no substitute for*

*personal checking.* Ask questions. Find out for yourself if your men know what their business is and that orders are being carried out. Do not go about a job so hastily that it cannot be well planned and coordinated. Incidentally, planning ahead does not stifle initiative; it stimulates it.

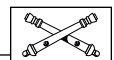
*Avoid hasty decisions.* That is the quickest way to lose confidence and many lives. Always think out your decisions carefully. Careful thought prevents frequent changes in orders, which are demoralizing and inspire a lack of confidence in the commander. Further, be cautious when the situation allows. This will help to build up the confidence of your men for aggressive action when caution—as it must be sometimes—is cast aside.

*Pick the right men.* You will get the job done better and save lives. Do not send four men up with a forward observer if three will do.

*Select positions carefully.* It means the safety of your men as well as the accomplishment of the mission.

*Command your battery.* Don't let anybody run your battery for you or make decision for you that you are in a position to make yourself. I firmly believe that in one instance I would have lost fully one-fourth of my battery had I allowed others to change my decisions.

The battery commander—the company commander—is the man to whom so much is owed. It is he who is charged with the execution of orders. He is the man who supplies the driving force to victory.



Captain John J. Norris graduated from West Point in January, 1943. After finishing a battery officer's course at the Field Artillery School, he was assigned to Battery "C," 379th FA Battalion, where he served as motor officer and battery executive officer before becoming battery commander in February, 1944. His battery entered combat in Holland with the 102nd Infantry Division on 4 November 1944, and was on the Elbe River on VE Day. He was awarded the Bronze Star Medal for meritorious service during the period he was in combat. Recorded originally merely as a matter of personal interest in preserving impressions while still fresh in his mind, Captain Norris' observations reflect throughout a strong and justifiable pride in his unit and in soldiering, the keys, as he so rightfully observes, to morale and discipline. Captain Norris is serving presently [July 1946] as S2 of the 1st Infantry Division Artillery in Germany.





# Leading From The Front and By Example

By Command Sergeant Major Lash L. Sturdivant,  
IIIrd Armored Corps Artillery

**T**he US Army is a unique, demanding and rewarding profession. Many tasks in our profession are crucial for the freedom of our country and allies. Therefore, any decision made by a soldier could be a matter of life, death or national security. Knowing this, we must have an Army that has strong, competent and responsible leaders who are willing to lead from the front and by example.

During the past few years, the time between promotions to corporal through staff sergeant has decreased considerably. What we teach our soldiers, then, becomes even more important to the Army as these soldiers take the reigns of leadership at a younger age with less experience. We must set and model high standards for our soldiers to work and live by.

**Lead From the Front.** We must realize that the definition of the word "leader" places one at the head and not the rear. As leader, you are the head who receives the mission or task and, in turn, carries the rest of "your body" with you. The mission or task may not be accomplished to its fullest if the leader is not willing to take his position out front. Our Army is depending on us, as leaders, to discipline, motivate and

train our junior soldiers to be successful leaders in the 21st century.

It is essential our soldiers have someone to look to for guidance to accomplish whatever mission or task is at hand. They must have someone out front to motivate them to accept the purpose behind the mission as their own and not merely follow orders.

When the soldiers' purpose becomes one with the mission, their morale will be high. And the high morale will not only affect a few individuals, but it will spread and affect the entire team. This, in turn, sets the conditions for mission success before the work even begins.

**Setting and Enforcing the Standards.** For America's Army to remain the only superpower Army throughout the 21st century, we must have professional, technical, tactical and moral standards in place and live by them. We as leaders must work harder to bring junior enlisted soldiers up to these standards.

Your soldiers will be professionals if led by a professional. They will be tactically and technically proficient if their leader is tactically and technically proficient. They will live by Army values if their leader lives by Army values.

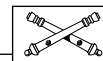
**Leading by Example.** Three of the most valuable words for leaders are

"lead by example." While he is leading from up front, while he is setting the standards, a leader's actions are "heard" more than words. What a leader *does* is more important than what he *says*.

In fact, your actions add credibility to everything you teach or say to your soldiers. You gain the trust and respect of your subordinates as well as from your peers and seniors alike when your actions support your words.

We always must remember we are soldiers 24 hours a day. Therefore, leaders at every level must conduct themselves accordingly at all times—on the job, on post, at home or downtown. Such conduct sets good leaders apart from the rest.

During the past decade, our Army has been challenged by many obstacles at home and abroad. If we are to continue to meet and overcome the challenges that lie ahead, then we, as leaders, must continue to lead from the front, set and enforce standards, and be the living example that our soldiers will want to emulate.



Command Sergeant Major (CSM) Lash L. Sturdivant has led the IIIrd Armored Corps Artillery, Fort Sill, Oklahoma, since December 1998. He also served as the CSM for the 2d Battalion, 29th Field Artillery in the 1st Armored Division, Germany; 1st Battalion, 37th Field Artillery in the 2d Infantry Division, Fort Lewis, Washington; 1st Battalion, 8th Field Artillery in the 25th Infantry Division (Light) at Schofield Barracks, Hawaii; and the 75th Field Artillery Brigade in III Corps Artillery. CSM Sturdivant served 8 years as a First Sergeant and 2 years as a Drill Sergeant.

## Field Artillery History Author Wins National Award

"Congratulations!" to *Field Artillery* author Major Prisco R. Hernandez whose article "No Master Plan: The Employment of Artillery in the Indian Wars, 1860-1890" was selected the best of the Army Professional Journal historical articles published in 2000 by the Army Historical Foundation, Inc., Arlington, Virginia. The award includes a plaque and \$250. He is the Training Officer, Training Section of the 4th Brigade, 75th Division (Train-

ing Support), Fort Sill, Oklahoma. He won Second Place in the 2000 US Field Artillery Association's History Writing Contest with this article. He also won Second Place in the 2001 contest, as published in this edition.

Another historical article from *Field Artillery* made the finalists for the recent national award: "Fire Support at the Battle of Kursk" by Captain Thomas J. Weiss II, Commander, A Battery, 2d Battalion, 82d Field Artillery,

1st Cavalry Division at Fort Hood, Texas. He won First Place in the 2000 US Field Artillery Association's History Writing Contest with this article.

*Field Artillery* has had two national award winners and three additional finalists in the past three Foundation competitions. Lieutenant Colonel R. Powl Smith, Jr., also won this prestigious national award for his 1998 article "Staying on the Cutting Edge: Military Professionalism and the Mexican War."

# Confessions of a (Once) Artillery Lieutenant

By Brigadier General (Retired) Richard F. Allen, USAR

It has been said that a wise man learns from his mistakes, but a *wiser* man learns from the mistakes of others. I want to confess three mistakes I made as a young artillery officer long ago (now that the statute of limitations has run out), in the hopes that others will learn from them. The errors I made were the result of immaturity, ignorance and arrogance. But as the Good Book says, let he who is without sin cast the first stone.

## Mistake 1: Borne of Immaturity.

After my officer's basic course at Fort Sill, Oklahoma, in 1963, I was assigned to a Field Artillery battalion in Germany. I was young and eager, ready to learn all about the Field Artillery and anxious to do a good job. To help prepare myself, I read a book about another young artillery officer, one Napoleon Bonaparte, to see if there were things that made him a success that I could employ in my career. One of the things the book said was that Napoleon liked to take very hot baths because it relaxed him and cleared his mind. I took very hot baths for a couple of months, but all I got was clean.

I next read a book about General George Patton called *Ordeal and Triumph*. It is a great biography that I rec-

ommend to everyone, young or old. General Patton seemed to be the perfect warrior and the perfect role model for me. Well, it didn't take long for me to realize I was wrong. He was a perfect role model, but not for me. General Patton was a Type A, extroverted, charismatic, natural-born leader; on the other hand, I was a Type B, introverted, non-charismatic, school-trained leader. Even if I wore pearl-handled .45s and carried a swagger stick, I never could be like Patton.

The mistake I made was trying to be somebody I was not, something none of us can do successfully. As leaders, we have to be ourselves and develop our own style. Certainly, we can learn from reading about and observing great military leaders, but we really cannot copy them. Many great military leaders are charismatic, natural-born leaders, but most of us are not. We are leaders because the Army needs leaders and has selected and trained us for that role.

If we remember our training and use it, we can be effective leaders because (1) Setting the example works, (2) Setting and enforcing high standards works, (3) Focusing on the mission and taking care of soldiers works, and (4) Adhering to Army values works.



Staff of 2-83 FA in Germany in 1963. First Lieutenant Allen is the second from the left.

By the time we finish our officer's basic courses, we non-charismatic leaders will have been taught everything we need to know to make us good leaders. How we use what we have been taught determines whether or not we blossom into outstanding leaders. My advice—just be yourself and apply your training.

**Mistake 2: Borne of Ignorance.** I was the battalion communications officer, responsible for the battalion's AM and FM radio nets and wire communications. One day I was in the S2's office bellyaching about the low GT scores of a new group of wiremen. "How was I supposed to communicate with such poorly qualified men?" I asked the S2. The S2 sergeant, Master Sergeant Baldas, a World War II veteran, overheard my complaints and said respectfully, "Well, Lieutenant, you can say what you will, but the American soldier has fought a lot of wars, and properly led, they have never let us down."

That stopped me short because I realized he was right—our soldiers never have let us down, even in many cases when they were not particularly well led. I never complained about the quality of my soldiers again. And, as it turned out, those wiremen never let me down, and we had great communications throughout the battalion.

I think Sergeant Baldas' putting me in my place helped shape my philosophy about blame and credit. When a unit I led did something well, whether it was my communications platoon in Germany, ammunition company in Vietnam or brigade in the US Army Reserves, I tried to give as much credit as possible to the junior officers and enlisted personnel—in most cases, they deserved it. But when things went wrong, I assumed responsibility in public and made corrections in private.

My philosophy is that if anything goes wrong, it is because of one or more of three errors: (1) I had not properly trained my soldiers, so they did not know better; (2) I had not effectively communicated what I wanted, so how would they know? (3) I had not properly supervised the execution of my orders, so how could I expect better results?

The teaching point here is don't underestimate your soldiers; give them the opportunity and then full credit when they make you look good. And don't forget you ultimately are responsible for everything the unit does and especially responsible for anything your unit fails to do. If you look for someone to

blame when things go wrong, look first in the *mirror*.

**Mistake 3: Borne of Arrogance.** My third mistake was the most serious mistake because it could have gotten people killed. As a junior, unmarried artillery lieutenant, I often was given the opportunity to serve as a safety officer, not only for the firing batteries in our battalion, but for our sister battalions as well. Being a safety officer meant more time in the field at Grafenwoehr and Wildflecken, both of which could be extremely unpleasant in the wintertime. But serving as safety officer broke the monotony of garrison duty.

I took the job seriously and conscientiously tried to be the best safety officer in V Corps Artillery. I was pleased on more than one occasion when another battalion commander would call my battalion commander and compliment “my hustle.”

One very cold January day, I was working with the 4th Battalion, 18th Field Artillery, a 155-mm self-propelled battalion at Grafenwoehr. It was one of those bone-chilling cold days—so cold that steaming hot coffee or hot chocolate in your canteen cup almost froze before you could finish it. As always seemed to be the case, a fire mission came down just as the battery was serving supper. Anticipating such an event, I had finished eating early and was at the exec’s post. Another battery had fired the adjustment, and our battery was to fire one volley for effect.

I began by checking Gun Number One on the far right of the firing line, then raced to Gun Number Two. When I got there, the round had been rammed home, but the gun was not ready to fire because there was only an assistant gunner on the piece. In those days, the gunner sat on the right side of the tube and set the elevation, and the assistant gunner set the deflection on the other side. Both had to be set simultaneously for the round to be properly aimed.

As a safety officer, I had seen elevations set many times, so I told the sergeant, no sweat, that I would set the elevation and he could set the deflection. I did my part, announced, “Ready,” and he said, “Set.” I declared the gun safe and raced to the next one. When I had “safed” all six guns in the battery, the mission was fired, and I caught my breath as I ambled back to the exec’s post.

The executive officer (XO) was a friend of mine from our officer’s basic course, a good guy from the University



Radio-Telephone Operator SP4 Stan Podelski with 1LT Allen on Observation Post Papbenberg South at Grafenwoehr in 1964.

of Southern Mississippi. He asked me what happened on Gun Number Two. I asked him what he meant, and he said, “When I looked down the firing line just before firing, Number Two didn’t look right, so I had it re-checked. It was 100 mils too low.”

My stomach tightened and my legs felt like mush. I knew that a 100-mil error would have caused the round to land well short of the impact area. In fact, the round probably would not have cleared the ridge between the firing position and the impact area, and on the ridge were a well-traveled road and observation posts.

I had not followed the correct procedures, but, luckily, the XO had. He remembered his training, and that caused him to give the firing line one last visual check before giving the fire command, and he saw the problem. When I got to Gun Number Two, I should have called the XO and told him either to take Number Two out of the mission or get a gunner on it. But I was trying to be helpful and do someone else’s job—a job I wasn’t qualified to do, even though I had observed it being done many times.

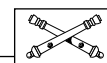
Army schools teach us that every Army unit has certain capabilities and certain limitations. The same applies to us as individuals. We all have capabilities and limitations, and being able to recognize and accept our limitations is almost as important as being able to fully exploit our capabilities.

I made the serious mistake of thinking that just because I was a good safety officer, I could be a good gunner. In my arrogance, I failed to appreciate that my lack of training was a severe and dangerous limitation. The XO did his job and, in so doing, probably saved lives and certainly saved my career.

**Conclusion.** Were these the only mistakes I made as a young officer? Hardly. I could go on and on, such as the time I brought an entire command post exercise (CPX) to a halt because I had the corps commander, the corps artillery commander and our group commander lost in a snow-covered forest.

Right now you are probably wondering how I got promoted to First Lieutenant, much less Brigadier General. Generally, I found the Army tolerant of mistakes made in good faith by officers trying to learn to do a good job. The only people who didn’t make mistakes were those who didn’t do anything, and the Army recognized that. The term “Zero Defects” must be purged permanently from the Army’s lexicon.

You will make mistakes, you will see mistakes made by your fellow officers, and you have read and laughed at some of mine. My advise is don’t dwell on mistakes. Learn from your mistakes, “shake them off” and get on to the next task. And learn from the mistakes of your comrades—you will be all the wiser for it.



Brigadier General Richard F. Allen, US Army Reserves (USAR), retired in 1993 after starting out as a Lieutenant in the Field Artillery in 1963. He earned his Juris Doctorate in 1973 from the University of Alabama Law School and now serves as Chief Deputy Attorney General for the State of Alabama. He started as a battery and battalion staff officer in the 2d Battalion, 83d Field Artillery, part of the 212th Field Artillery Group, V Corps, in Germany. He commanded the 148th Ordnance Company (Ammunition) and the Headquarters and Headquarters Company of the 53d General Support Group, both in Vietnam. He also served as Commander of the 375th Theater Army Support Group (USAR), Montgomery, and as Commanding General of the 3d Transportation Brigade (USAR), Anniston, both in Alabama. He is a graduate of the Army War College, Carlisle Barracks, Pennsylvania. In May, Brigadier General Allen was inducted into the Ordnance Corps Hall of Fame, Aberdeen Proving Ground, Maryland.



## *Eyes of Artillery: The Origins of Modern US Army Aviation in World War II*

Edgar F. Raines, Jr., Washington, DC:  
Center of Military History, 2000, 372  
Pages (GPO Stock No. 008-029-00356-  
2). \$43.00.

Innovation is the razor's edge of war. In Normandy during the bloody fighting of the summer of 1944, one crucial battle of move and countermove between determined foes was to find and kill the German artillery. Although the Germans had few guns and little ammunition, they used their limited firepower with devastating effect.

When the American infantry assaulted, the troops found themselves crossing narrow, tree-lined sunken lanes and small fields bounded by thick borders of wood and brush. Slowed by mines, snipers and planned defenses, the attack formations made choice targets for a few well-placed volleys. Forward observers, who rarely could see beyond the next line of trees, were useless in the counterbattery fight. Sound-ranging platoons provided a means to go after enemy artillery, but coordinating fires by this method was time-consuming, cumbersome and reactive.

The Americans needed a better way. Their savior was the aerial observation post—the “eyes of artillery.” In an important new book, Edgar F. Raines, a historian at the US Army Center of Military History, chronicles the evolution of aerial observation for artillery in one of the most successful, yet unheralded innovations of the interwar years.

In Raines' narrative, the hero of the story is Major General Robert M. Danford, the Chief of Artillery between January 1939 and December 1942, who tirelessly championed the case for building an organic Army aerial observation force. Artillery spotting by plane had been tried during World War I but proved wholly unsuccessful. Based on these lessons Army senior leaders dismissed the idea altogether. Leaders of the fledgling Air Corps were equally unenthusiastic. Chief of the Air Corps, Major General Henry H. Arnold (later commanding general of the Army Air Forces) rejected experimentation in aerial observation in favor of investing the service's energy and resources on strategic bombing.

The first chapters of Raines' book are a case study of the roles of leadership and bureaucratic infighting in determining the course of military innovation. Through luck, guile and persistence, Danford overcame Arnold's opposition. In December 1941, he obtained War Department approval for testing the air observation post.

Several factors contributed to the feasibility of Danford's initiative: the development of light, static-free radios; the fire direction center (FDC) that allowed commanders to quickly mass fires on a common point; and light, durable aircraft that could land and take-off on short unimproved fields. Once tests

got underway, the feasibility of combat aerial observation was soon apparent. Tests and further experimentation proved sufficiently successful to lead to the incorporation of air observation post sections in all US divisional structures.

Military innovation requires trained soldiers and suitable methods as well as new technology and organizations. The middle chapters of *Eyes of Artillery* detail the challenges of training, air safety, supply and maintenance and the evolution of doctrine in the brief period between the first tests and the artillery observers debut in combat.

Not surprisingly after a whirlwind fielding process, initial efforts were marred with miscues. In November 1944, the first three L-4s were launched off the carrier *Ranger* the day after troops landed in North Africa as part of Operation Torch. Unfortunately, no one had added the plane's silhouette to the recognition book for anti-aircraft gunners. The cruiser *Brooklyn* opened fire on the strange craft. All three crash-landed.

Like many innovations untested by battle, artillery observation only reached its full potential when trained, fearless and innovative soldiers applied their intelligence and energy to the challenges of war. The remaining chapters survey the employment of Army aviation in each theater.

A final chapter on postwar developments and a thoughtful and insightful epilogue cap the book. Here lies the book's only shortfall; even an excellent survey cannot do justice to the still largely untold story of the incredible skill, bravery and inventiveness of the aerial observation sections.

Normandy was a case in point. Doctrine offered no blueprint on how to hunt enemy artillery in the thick tree-covered Normandy landscape. Observers discovered that on calm days they could pick out artillery by the lingering smoke around the firing positions. But German gunners soon learned to stop shooting when they detected spotter planes in the area. American pilots then became skilled at buzzing a suspected position; flying away, and then circling back to catch the enemy off-guard.

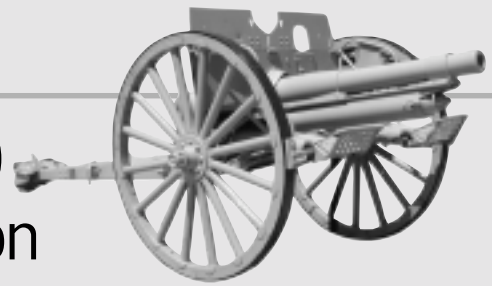
Aerial observers also started hunting for artillery at dusk and dawn when the flash of firing guns was easier to spot. Commanders learned to cross-cue aerial observers with other sensors. By the end of July, German battery commanders were fearful to fire more than a single volley before changing their positions.

While Raines cannot tell the whole story, his narrative is excellent—richly researched and documented, well-illustrated and superbly edited. This book is also timely. As today's artillerymen struggle with the challenges of innovation and transformation, the book gives a worthy example by which to measure their efforts.

I highly recommend *Eyes of the Artillery* as good history and for stimulating debate on the methods and goals of military innovation. It is available for public sale through the Government Printing Office (GPO) and can be requisitioned as CMH Pub 70-31 through the US Publishing Agency.

LTC James J. Carafano  
Executive Editor, *Joint Force Quarterly*  
National Defense University, Washington, DC

# Researching FA and DoD Current and Historical Information



**1. Field Artillery Magazines On Line.** We are in the process of putting entire editions of the magazine on line for researchers to download in pdf format: [sill-www.army.mil/famag](http://sill-www.army.mil/famag). As of the publication of this magazine, we had magazines on line back to 1989; the goal this year is to have all magazines on line back to 1980 and, eventually, back to the magazine's inception in 1911. Another goal is to add an engine for on-line searches of the magazine by subject, author, title, year or feature (article, column, interview, etc.).

**2. Researching FA Unit Histories.** You can search for a unit history or its lineage on line via the US Army Center of Military History, Fort McNair, Washington, DC: [www.army.mil/cmh-pg](http://www.army.mil/cmh-pg).

**3. Department of Defense (DoD) Research Sources.** MERLN (Military Education and Research Library Network) is a database of 12 military libraries' catalogs on line: Air University Library, Combined Arms Research Library, Joint Forces Staff College Library, Marine

Corps University Library, National Defense University Library, Naval PostGraduate School Library, US Air Force Academy Library, US Army War College Library and Military History Institute, US Coast Guard Academy Library, US Military Academy Library, and US Naval Academy Library. MERLN can be accessed via any of the 12 library web sites. MERLN's connection to the web site at the National Defense University: <http://merln.ndu.edu>.

MERLN offers the combined resources of the largest and most comprehensive collections of military information resources in the world by providing access to the holdings of the participating libraries. You can search MERLN by key word, author key word, subject heading key word or advanced searching (Boolean, ISBN, ISSN or Series).

**4. Web Sources for Military History.** Military history buffs can access <http://members.aol.com/dann01/military.html> and find hundreds of links to military history web sites in America

and around the world. The web site's originator is Dr. Richard Jensen, Professor of History Emeritus at the University of Chicago, who taught history for 30 years and was a Distinguished Visiting Professor at the US Military Academy at West Point.

The site has 23 pages of on-line links organized by historical categories: Ancient, Medieval, 16th-17th Centuries, 18th Century, American Revolution, Napoleonic Era, 19th Century, US Civil War, World War I, World War II, Cold War, Third World, Korea, Vietnam, Desert Storm to Kosovo and additional categories of Air Power/Aero-Space and Sea Power. Contributors include The History Channel, Yale University, the University of California and many other institutions and individual experts.

The web sources include bibliographies; official documents, letters, articles and books on line; maps; photos; drawings and paintings; poetry and literature; reenactments; historical societies and museums; and others sources.

## Chief of Staff of the Army's Professional Reading List

### Cadets, Soldiers and Junior NCOs

*Band of Brothers* by Stephen Ambrose  
*The Long Grey Line* by Rick Atkinson  
*The Greatest Generation* by Tom Brokaw  
*This Kind of War* by T. R. Fehrenbach  
*America's First Battles* by Charles E. Heller and William A. Stofft  
*A Concise History of the U.S. Army: 225 Years of Service* by David W. Hogan, Jr.  
*The Face of Battle* by John Keegan  
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# Tuzla to Cortina From Peacekeeping to Warfighting

By Lieutenant Colonel Samuel H. Johnson  
and Major Donald H. Myers

“Training is the cornerstone of readiness and the basis for credible deterrence and capable defense. Training is the means by which the Army’s quality soldiers and leaders develop their warfighting proficiency and exercise the collective capabilities they will require in combat. Training prepares soldiers, leaders, and units to fight and win in war—the Army’s basic mission.”

*FM 25-101 Training the Force: Battle-Focused Training*



2-15 FAR

In April, the 2d Battalion, 15th Field Artillery Regiment (2-15 FAR), 10th Mountain Division, Fort Drum, New York, participated in a brigade-level, fires-focused rotation at the Joint Readiness Training Center (JRTC), Fort Polk, Louisiana. The battalion had the unique opportunity to receive dedicated training support from the FA School at Fort Sill, Oklahoma, and detailed feedback on its ability to plan, coordinate, and execute FA fires in support of a light infantry brigade combat team (BCT).

Based on this rotation, the battalion was asked to review its home-station training and share with others its “road-to-war” as 2-15 FAR transitioned from peacekeeping duties in the Balkans. During this transition, the battalion embraced new concepts and new equipment for providing fires and prepared for combat.

**The Training Plan.** In the fall of 1999, the majority of 2-15 FAR was braving the wintry conditions of Bosnia-Herzegovina and continued manning the perimeter on Eagle Base, Tuzla, as

part of the non-standard Stabilization Force (SFOR) 6 combat arms battalion mission. Meanwhile, the leadership of the battalion began planning the battalion’s next road-to-war. It did not take long to identify the next major fight and realize it lay in the not-so-distant future at Fort Polk in JRTC Rotation 01-06.

The staff used the early months of 2000 to finalize redeployment plans and map out the battalion’s road-to-war training (see Figure 1). Early planning set the stage for the battalion’s rapidly regaining its skills and contributed to a successful rotation at the JRTC.

After assessing the effects of peacekeeping on individual and collective skills, the battalion leadership determined training on the following areas would be key to regaining warfighting skills: rebuilding teams from the section-level up, developing company-grade officers to fight and win in small-scale conflicts, executing fires (voice and digital) from sensor-to-shooter, and establishing viable planning standing operating procedures (SOP).

**Rebuilding Teams.** After returning to Fort Drum, the battalion began transitioning from peacekeeping duties to providing direct support (DS) FA fires, starting with its foundation: teams from the section-level up. To accomplish this, the battalion developed a certification program that targeted howitzer sections, key leaders and fire support personnel.

Throughout the battalion’s train-up, certification played an important role in assessing leader confidence and section performance. Ultimately, this process validated perishable individual and collective skills, which eventually provided the firing batteries the chance to conduct their first live-fire training since July 1999.

**Developing Leaders.** The objective of this program was to ensure all leaders were technically and tactically proficient as well as confident in their abilities. The program was both for officers and NCOs, but it was unique in its approach to officer development, focusing on company grade officers.

The battalion command group philosophy was that the best place for lieutenants to learn and grow is not in another classroom environment but with their NCOs and sections conducting hands-on, performance-oriented training. On the other hand, captains needed a forum where they could interact and



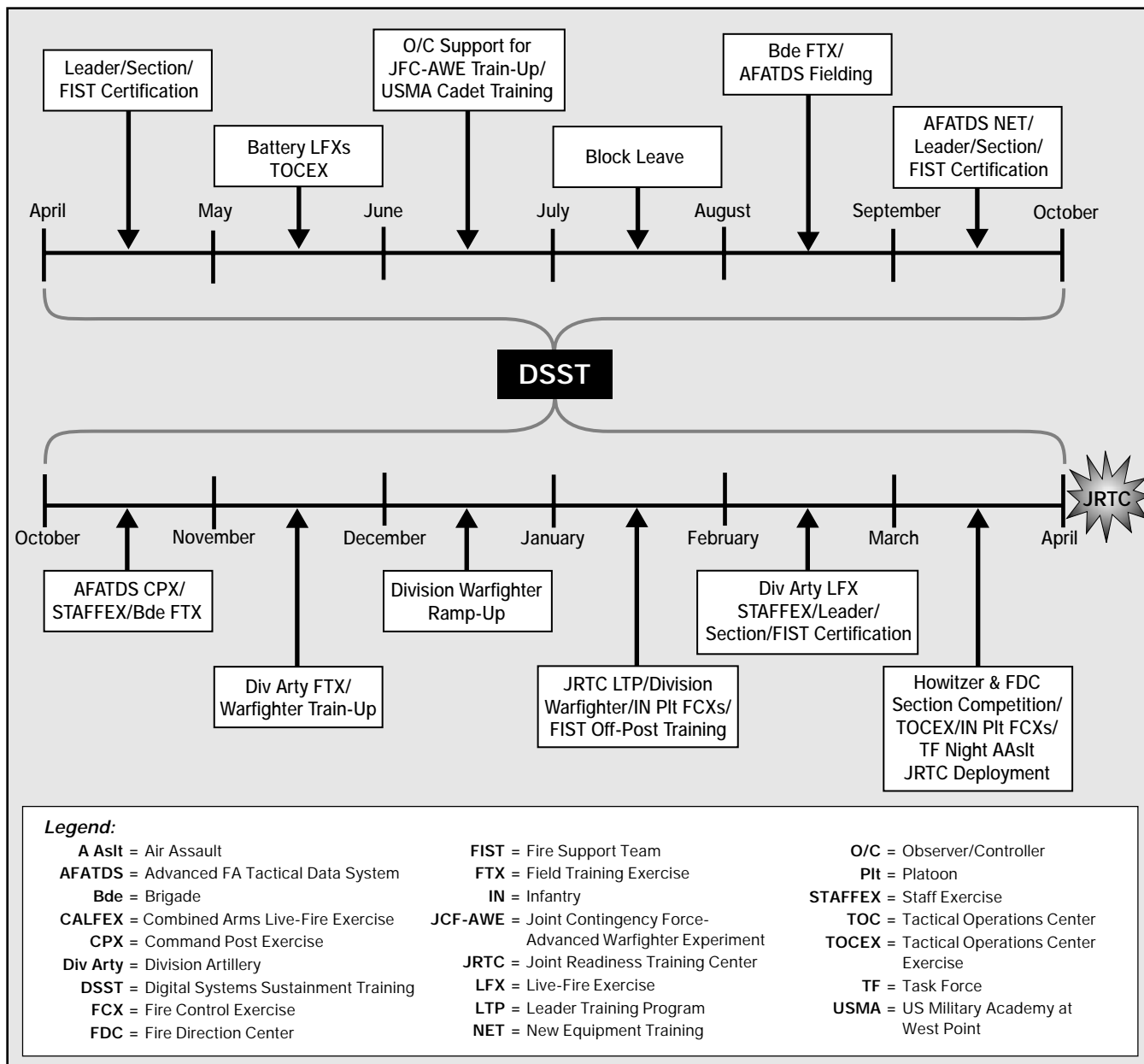


Figure 1: 2-15 FAR Road to War Time Line

address topics concerning the training and employment of artillery assets in a DS role. Consequently, the battalion commander led the captain's training, teaching the fundamentals and tactics, techniques and procedures (TTPs) of the battalion's mission-essential and collective tasks.

The format for these classes was "semi-formal" and focused on preparing leaders for upcoming training events, combat training center (CTC) rotations and combat. Although the primary audience for these classes was captains, all officers and NCOs were encouraged to attend. Many of the topics discussed during the captain's training are listed in Figure 2.

**Delivering Fires.** The battalion's success in providing fires to the BCT rested on its ability to inculcate in every sol-

- Battery Defense
- Emergency Occupations
- Advanced Field Artillery Tactical Data Systems (AFATDS)
- Firebase Construction and Operations
- Tactical Fire Direction
- Targeting
- Tactical Use of Smoke
- Air Assault Operations
- Fire Support in Military Operations in Urban Terrain (MOUT)

Figure 2: Subjects Taught at 2-15 FAR Captain's Training

dier the importance of planning and executing accurate and timely fires. Therefore, the battalion implemented a training plan that validated individual and collective skills; demonstrated proficiency on new equipment, such as the advanced FA tactical data system (AFATDS); tested the unit's ability to execute fires at the battery and battalion-levels; and sustained digital proficiency throughout the battalion.

The battalion designed a certification program that objectively assessed the abilities of the leaders, howitzer sections, fire direction centers (FDCs) and fire support personnel to deliver fires. This program was conducted before live-fire events, testing individual

knowledge and demonstrated proficiency. Additionally, the assessment provided a baseline for the battery leadership to determine how to most effectively train their personnel. Finally external gunnery evaluations and combined-arms live-fires tested the battalion's ability to deliver accurate and timely fires. The success of these events instilled leader confidence and validated their abilities to execute their critical wartime collective tasks to standard.

One of the major milestones for the battalion along its road-to-war was fielding and conducting new equipment training on AFATDS. In September 2000, the battalion fielded AFATDS. Key leaders and operators throughout the battalion participated in a two-week train-up, allowing the battalion to conduct FA planning and operations in a digital environment. Completing all new equipment training (NET) sessions on time, the battalion executed a command post exercise (CPX) to validate its proficiency on digital equipment and employed its capabilities during back-to-back brigade- and division-level exercises.

During these exercises, the battalion executed fires at the battery and battalion levels. In the brigade exercise, the firing batteries delivered lethal fires in external gunnery evaluations. In the division exercise, the battalion massed fires and executed combined arms training focused on synchronizing the fight with the supported maneuver brigade. Throughout both events, the battalion used AFATDS to train on its mission-essential tasks which greatly enhanced mission analysis and preparation for and execution of fires at the brigade-level and below.

Sustaining and improving the battalion's digital proficiency was a weekly task. The division artillery established a sequential "gate" strategy for improving and sustaining the skills of individuals and sections on digital devices. Gate 1 focused on the proficiency of the operator and supervisor of each digital device. Gate 2 focused on the employment of digital devices within sections and teams. Gate 3 covered all collective digital fire support sustainment training



One of the advantages of peacekeeping in Bosnia was our junior leaders learned to make decisions daily— became self-led professionals.

2-15 FAR at the JRTC

tasks from sensor to shooter. This training consisted of at least 12 hours weekly.

**Establishing a Planning SOP.** Several articles have been written addressing the FA decision-making process. Two articles played a vital role in helping the battalion develop its planning SOP: "Artillerization of the Military Decision-Making Process [MDMP]" in the "Center for Army Lessons Learned (CALL) Newsletter," No. 99-11, August 1999, and "Wargaming—The DS Battalion Way" in the "CTC Quarterly Bulletin," No. 00-3, March 2000. Using these articles as guides, the battalion developed a planning SOP that addressed the doctrinal steps of the MDMP, incorporated the supported maneuver brigade's guidance and battle rhythm, standardized briefing formats and streamlined course-of-action (COA) development and analysis. In its SOP, the battalion standardized the planning process, ultimately, giving battery commanders more time to prepare.

To accomplish this, we addressed two issues. First, a DS FA battalion must focus on wargaming and executing a single COA. Second, the briefing formats needed to be tailored to accomplish more than one function.

**Focused COA.** *FM 101-5 Organization and Operations* states, "The focus of any planning process should be to quickly develop a flexible, tactically sound and fully integrated and synchronized plan that increases the likelihood of mission success with the fewest casualties possible." To facilitate this, it cites "time" as the most significant and unrenounceable factor when shortening the planning process.

Based on the general considerations listed in FM 101-5, the battalion developed an SOP that did four things. First, it increased the commander's involvement, allowing him more time to make decisions during the process without waiting for detailed briefings after each step. Next, the SOP forced the commander to become directive in his guidance, limiting options. Third, the SOP also forced the commander to limit the number of COAs developed and wargamed. Finally, the SOP maximized parallel planning with the supported maneuver brigade. What emerged

was a process that streamlined COA development and shortened staff planning and orders production by six hours.

The key to this planning process was the battalion and battery commanders' involvement. Because the emphasis was on the commanders, the staff was instructed to pay attention, take detailed notes and let the commanders talk and formulate a concept of operation.

The SOP outlines six steps in the process of developing a COA and wargaming it.

Step 1. Immediately following the mission analysis briefing, the S3 reviews the FA battalion task organization and outlines the brigade's area of operations, highlighting maneuver objectives and the current locations of the FA battalion, its subordinate units and any reinforcing units.

Step 2. The commanders review the brigade's mission statement and brigade commander's intent for fires to identify all FA tasks necessary to support the brigade's scheme of maneuver.

Step 3. From the list of FA tasks, the commanders assign each task to a specific unit. Some tasks may be assigned to the battalion tactical operations center (TOC) or administration and logistics operations center (ALOC), depending on the phase of the operation (e.g., the TOC's controlling the execution of any preparatory fires or the ALOC's assuming control of the battle).

Step 4. The battalion fire direction officer (FDO) provides his battlefield calculus. This updates the commanders on the ammunition on-hand—killer volleys and minutes of smoke available, family of scatterable mines

(FASCAM) and precision-guided munitions—proposed fire order standards, and estimated ammunition expenditures in support of the battle. The commanders then review the positioning of all FA units and adjust the positions, as necessary, to accomplish the assigned tasks.

Step 5. This critical step in the process identifies and links the essential fire support tasks (EFSTs) to essential FA tasks (EFATs). At this point, the battery commanders are released, departing with a firm understanding of the operation and their tasks. As they depart, the battalion commander and the S3 hand-carry a copy of the COA sketch to the brigade TOC and meet with the brigade fire support officer (FSO) to further assign fire support teams (FISTs) to each FA task.

This step ensures a detailed synchronization of fire support and FA assets. Figure 3 shows an example of EFATs linked to EFSTs.

Step 6. The FA battalion staff war-games the remaining details of the COA and prepares the wargame briefing and FA support plan (FASP).

*Tailoring the Briefings.* The second issue is to build a useful planning SOP centered on tailoring the briefings to accomplish more than one function and save time (primarily for the staff). After some brainstorming, it became clear that the best way to make the briefings multifunctional was to link the FA COA briefing to the battalion commander's concept back brief to the brigade commander. With minor adjustments, the staff could build one briefing to accomplish both tasks, thus reducing time and overhead.

**The High Road.** These are the things that worked well in our train-up for the JRTC.

*Leader Development.* One of the advantages of peacekeeping in Bosnia was our junior leaders learned to make deci-

sions. Peacekeeping duties forced junior soldiers (officers and enlisted) to make hundreds of decisions daily. These real-world operations turn leaders into self-led professionals. Additionally, our leaders facilitated the battalion's retraining for combat and enhanced operations at the JRTC. Leaders at all levels had learned the art of making smart decisions when the boss was not around.

*Planning SOP.* Standardizing the battalion's planning process was a critical issue. As such, the goal was to establish a SOP that was simple, effective and could be followed. In the end, the SOP proved to be an invaluable tool in planning and synchronizing battlefield operations in the BCT.

*Staff Training.* Because the battalion was about to go on a fire support focused rotation at the JRTC, the battalion could tap additional resources to enhance unit training. One resource came in the form of a CTC Trends Reversal

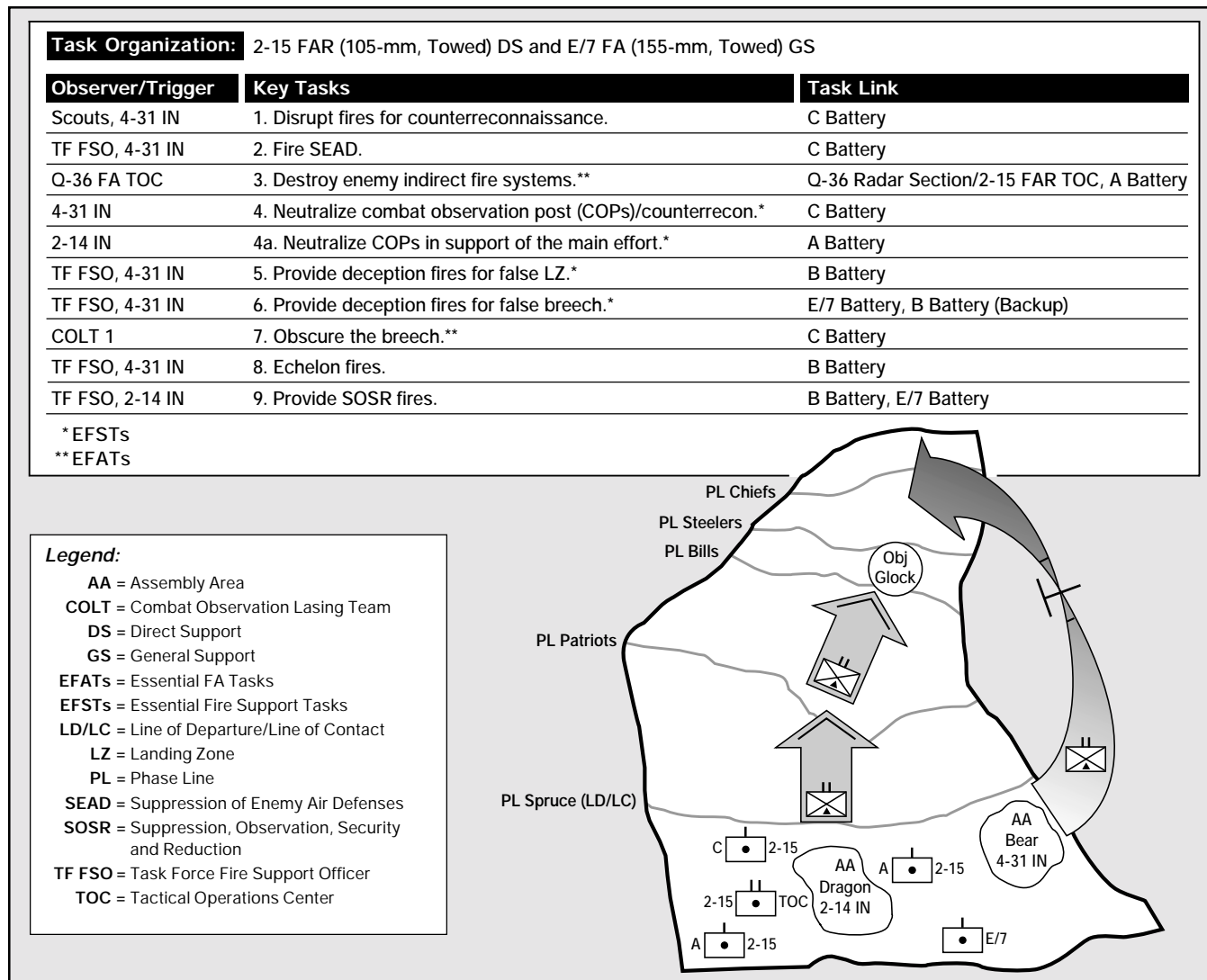


Figure 3: Example of a Course-of-Action (COA) Sketch with EFSTs and EFATs Linked



Team from the FA school. This team, consisting of former CTC observer/controllers, provided the battalion staff a systematic corrective approach to identify and fix repetitive negative trends noted by the CTCs.

The team's first visit concentrated on the academics of staff planning and integration; new equipment training, such as on the Viper or for precision lightweight global position system receiver (PLGR) upgrades for the FISTS; target refinement; and assistance with digital systems sustaining training (DSST). The team's second visit, which occurred just before the battalion deployed to the JRTC, focused on a command post exercise (CPX) for the staff to hone its skills on the MDMP and arterIALIZATION of the intelligence preparation of the battlefield (IPB) using a JRTC-based scenario. Additionally, the team conducted a fire support seminar and reviewed "keys to success" for each staff member.

At the end of both visits, the team provided the battalion detailed feedback on areas for future training that would sustain and improve combat performance. The response to this support was positive and heightened staff readiness for operations at the JRTC.

**Combined Arms Live-Fire Training.** During the train-up for the JRTC, the battalion conducted several live-fire exercises with its supported maneuver battalions. The two FISTS deploying to the JRTC conducted leader walk and shoot exercises, emphasizing the observers' ability to quickly integrate fires upon enemy contact and instilling leader confidence at the platoon and company levels.

Additionally, the battalion conducted a task force night air assault live fire. This combined arms live-fire exercise (CALFEX) gave the battalion a chance to execute multi-echelon training at its best. The support platoon tested its ability to conduct pick-up zone (PZ) control, hook-up teams validated training on UH-60 and CH-47D helicopters, one firing battery validated sling-load operations and force protection measures, the battalion fire support element (FSE) validated its planning and synchronization of fires, and the battery FDC trained on aerial observer missions with OH-58D helicopters. This was a tremendous event that set the stage for deployment to the JRTC Republic of Cortina.

**The Low Road.** We had some challenges during the train up for the JRTC.

**Time.** At first glance, the road-to-war time line indicates the battalion had plenty of time to prepare for the JRTC. What is not clear is the gate strategy the 10th Mountain Division uses to prepare units for deployment to the JRTC. This progressive strategy is based on focusing initial training efforts at the squad, platoon and company levels and then using this training as the foundation for battle-focused collective training at the battalion and higher levels. The training is tailored for artillery units, applying the artillery tables; but the concept remains the same.

Applying this strategy to the battalion's road-to-war time line, we conducted two brigade-level field training exercises (FTXs), called Commando Peak, and one division-level FTX, called Mountain Peak. In the first brigade FTX, battery commanders trained individuals and sections. The second brigade FTX focused on collective training at the battery and battalion levels. Finally, the division exercise served as a capstone for unit training and tested the BCT's ability to plan, prepare and execute advanced tactical operations in low- and mid-intensity scenarios.

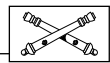
Normally after the division training program, units are at their peak and ready for deployment to the JRTC. Unfortunately, that was not the case for 2-15 FAR. After completing the division validation exercise, the battalion had to wait five months before deploying to the JRTC. As a result, the battalion had to create opportunities to train on collective skills and struggled to maintain its ability to execute at the battalion level.

**Weather.** The challenge of maintaining individual and collective training was exacerbated by the extreme winter weather at Fort Drum. Record snow falls and sub-zero temperatures frustrated the battalion on many occasions, and several training events at the battery-level had to be cancelled. Some sustainment training was pushed indoors.

**Personnel Turbulence.** Despite efforts to stabilize personnel throughout the battalion's train-up and deployment to the JRTC, the battalion experienced a 28 percent turnover rate between its capstone exercise in November 2000 and deployment to the JRTC in April 2001. After returning from Bosnia, the S3 section transitioned through four operations NCOs, two assistant S3s, two battalion FDOs and two battalion fire direction NCOs.

This high turnover rate was the residual effects from our previous stabilization for the SFOR 6 mission. The battalion constantly had to retrain and validate the basic military occupational skills (MOS). The constant retraining caused by the turnover reaffirmed the need to develop and implement a standardized Planning SOP that was simple to understand and easy to use.

**Conclusion.** Although much has been written and discussed concerning the degrading effects of peacekeeping operations, the success 2-15 FAR achieved at the JRTC clearly shows that through assessment, focused training and vigilant leadership a unit can quickly regain its warfighting capability. By looking deep and planning the battalion's next road-to-war training, 2-15 FAR developed a home-station training plan that allowed the battalion to deploy successfully and have a great JRTC rotation.



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Major Donald H. Myers, until recently, was the Executive Officer of 2-15 FAR at Fort Drum. He is now the XO for the G3 of the XVIII Airborne Corps, Fort Bragg, North Carolina. Among other assignments, he was the Brigade Plans Officer, Battalion XO and Firing Battery Observer/Controller (O/C) in the 4th Cavalry Brigade (Training Support) at Fort Knox, Kentucky. He also served as the Battlefield Effects Officer-in-Charge and Firing Battery O/C at the Combat Maneuver Training Center (CMTC), Hohenfels, Germany. Also in Germany, he was a Battalion FSO and Commander of A Battery, 2d Battalion, 29th Field Artillery, both in the 1st Armored Division. He is a graduate of the Command and General Staff College, Fort Leavenworth, Kansas.

# MLRS Live-Fire

## Qualification Through Multi-Echelon Training

By Lieutenant Colonel Gary A. Agron and Major Steven Bratina

At Fort Sill, Oklahoma, multiple-launch rocket system (MLRS) battalion commanders found themselves in a dilemma about how to optimize personnel, time and training areas and still meet live-fire qualification standards. As personnel shortages worsened, the *Raiders* of 1st Battalion, 12th Field Artillery, 17th Field Artillery Brigade, IIIrd Armored Corps Artillery, turned this challenge into an opportunity. The answer came in the form of multi-echelon training.

**The Training Challenge.** Current III Corps Artillery MLRS Artillery Tables require battalions meet the gates of crew, platoon and battery live fires before firing as a battalion, using progressive, sequential training (see Figure 1). Before live firing in the first qualification in III Corps Artillery Tables (Table 8), units must meet training and certification standards.

Table 8 requires the launcher crew to complete three types of missions to time and accuracy standards: “When Ready” (WR), “Time-on-Target” (TOT) and “At My Command” (AMC). Artillery Table 12 requires the platoon operations center (POC) and firing platoons qualify live fire by completing the three missions. Further, Artillery Table 15 requires the bat-

tery operations center (BOC) and firing battery qualify live fire using the same three missions. Finally, Table 18 directs the battalion fire direction center (FDC), three BOCs and the six firing platoons qualify with the same missions.

Table	Description	Remarks
6	Crew/Section Training	Dry Fire
7	Crew/Section Certification	Dry Fire
8	Crew/Section Qualification	Live fire
10	Platoon Training	Dry Fire
11	Platoon Certification	Dry Fire
12	Platoon Qualification	Live Fire
13	Battery Training	Dry Fire
14	Battery Certification	Dry Fire
15	Battery Qualification	Live Fire
16	Battalion Training	Dry Fire
17	Battalion Certification	Dry Fire
18	Battalion Qualification	Live Fire

Figure 1: III Corps Artillery Tables for Live-Fire Qualification. 1-12 FA (MLRS) qualifies by completing “When Ready,” Time-on-Target” and “At My Command” missions. (These tables start at number 6 to bring the tables in numerical synchronization with maneuver tables. For the same reason, there is no Table 9.)

**Ammo Constraints.** The battalion live fire qualifies within the constraints of “DA PAM 350-38 Standards in Weapons Corps Artillery Tables,” commonly known as “STRAC.” The III Corps Artillery Tables don’t match the recommendations for ammunition requirements within STRAC. However, STRAC allows the commander to choose which fire missions to include in the unit’s mission-essential task list (METL)—such as the three missions previously mentioned.

III Corps MLRS units only receive nine reduced-range practice rockets (RRPR) per launcher per year. Thus, our 3x6 MLRS battalion’s annual STRAC allocation is 162 rockets, allowing each battery a total of 54 rockets per year to fire the three missions.

The current STRAC doesn’t allow us to conduct the four separate gates (Artillery Tables 8, 12, 15 and 18) with our two-man launcher crews (due to personnel shortages) that must qualify three times a year (due to personnel turnover). This ammunition constraint does not allow the battalion commander to mass the fires of the entire battalion. Therefore, the *Raider Battalion* conducts three live-fire exercises, using multi-echelon training and 54 rockets each exercise, to ensure the crews are live-fire qualified by III Corps Artillery standards.



1-12 FA

*Personnel Shortages.* The unit status report (USR) directs that to *qualify* a launcher section, the section chief, gunner and driver must be present. Due to the shortage of 13M launcher crewmen, the *Raider Battalion* configures each launcher section to have a two-man crew: the section chief and a driver. The driver also functions as the gunner. The other 13Ms are used in ammunition sections.

The current firing battery modified table of organization (MTOE) has 12 ammunition sections. The intent is to fill the ammunition sections until all are manned with two soldiers and then begin filling the launcher sections with the third soldier. The personnel shortage has not allowed us to fill all 12 ammunition sections, and the launcher crews have remained two-manned sections. Consequently we cannot qualify a launcher section under the USR rules.

Eighty percent of all launcher crews in III Corps Artillery are two-man sections. Thus, we *certify* our launcher sections using the current STRAC and personnel available. By conducting multi-echelon training, we live-fire *certify* the section, platoon, battery and battalion within the constraints of STRAC.

*Time Constraints.* The competing demands of personnel shortages and time management have put a strain on the MLRS battalion. Through historical data, the *Raiders* determined that it takes three to four days to accomplish each artillery table. The 12 artillery table's for the section, platoon, battery and battalion, coupled with the maintenance and services of 44 vehicles in each firing battery and the personnel shortage, have created a time management challenge for the commanders.

All nine MLRS units in III Corps Artillery do not have enough 13P Fire Direction Specialists to conduct 24-hour operations. Therefore, III Corps Artillery adopted a non-doctrinal method whereby the two POCs are now combined into one alternate battery operations center (ABOC). This gives the firing battery a BOC/ABOC combination, which allows the battery to conduct 24-hour operations. The 13P soldiers are integrated in the BOC/ABOC and simultaneously conduct fire mission training, certification and qualification with the launcher sections.

*Training Area Limitations.* Training areas large enough to accommodate an MLRS battalion live-fire qualification are limited at Fort Sill. Both III Corps Artillery units and Training and Doctrine

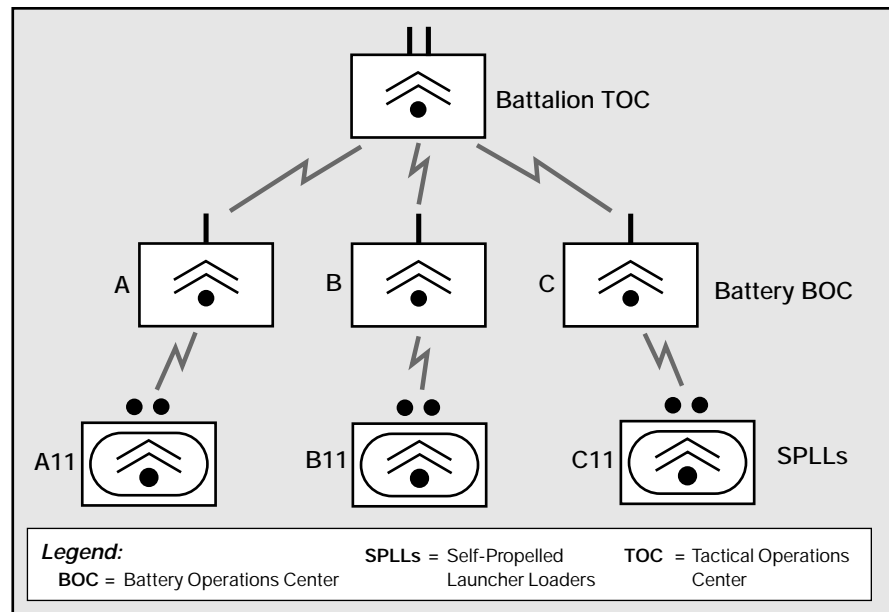


Figure 2: Multi-Echelon Training. The battalion fire direction center (FDC), three BOCs and three launchers live-fire certify simultaneously in one scenario, applying the III Corps Artillery Tables. All 18 launchers rotate through the firing point to live-fire certify.

Command (TRADOC) training units compete for the limited training areas.

Currently, Fort Sill has only five training areas open for MLRS live fires. Unfortunately, only one training area and firing point is large enough to have hide areas, firing positions and reload points within a two-kilometer-by-two-kilometer area. The other training areas are small and require between five and 10 road guards to block roads during the live-fire windows.

**Multi-Echelon Training.** A way to meet the III Corps Artillery Table live-fire requirements is to combine the four artillery table qualification gates into one live-fire-exercise. The scenario of a basic fire mission is the same for each exercise. An observer initiates a fire mission that is sent to the battalion FDC, which in turn sends it to the BOC. The BOC then sends the mission to the launchers for movement to the firing point, technical fire direction calculation and, eventually, rocket launch.

The multi-echelon-training concept is unique in that the battalion sends the fire mission to all three BOCs at the same time. Each BOC sends the mission to one of its launchers. The result is the battalion FDC, three BOCs and three launchers from different batteries qualify and live-fire simultaneously. (See Figure 2.)

All 18 of the battalion's launchers are rotated through the firing point to participate in these "battalion mass missions" as they conduct their three re-

quired section certification fire missions. The firing of actual ammunition greatly adds to the intensity and realism of the training event for all fire direction personnel.

An assumption used in this live-fire training technique is that if a BOC can command and control one launcher and send a digital fire mission to that launcher, it should be able to do so for six launchers. (This assumption is necessary due to restrictions on the number of firing points available, the number of launchers that can safely fire simultaneously from each point and because our unit was not willing to accept the risk of mixing live-firing and dry firing sections).

We do not assume away communications and maintenance problems. These are complications inherent in an MLRS battalion, and they occur during multi-echelon training. We work through these problems for the three launchers on the firing point much like we would if all 18 launchers were firing. Thus, the battery replicates command and control and delivery of fires of six launchers using one launcher, and the battalion replicates the same METL tasks for 18 launchers using only three BOCs and three launchers.

Although most battalion FDC personnel have controlled battalion-level TOT and AMC missions during simulations and dry-fire training, few have conducted these missions with live rockets on the launchers. Altogether, the ad-



vantage of these “mass” missions is the battalion FDC and battery BOCs receive more training for the same rockets fired.

Instead of conducting four sequential live-fire artillery tables, the battalion conducts a live-fire field exercise three times a year and gains valuable echeloned fire direction and command and control training. This reduces the time needed for live-fire qualification from 16 to four days. The battalion uses one-third of its STRAC rockets during each III Corps Artillery training cycle to train new crews and live-fire certify them.

Using multi-echelon training, the MLRS battalion meets the standard of live-fire qualification and frees up more time to conduct other training or complete vehicle maintenance. Furthermore, collocating the battery BOCs and launchers in one training area minimizes the training areas required and allows more units to train.

A potential safety issue involved in this training is on the firing point because the battalion is combining three launchers from three separate batteries on to one restricted piece of land. On Fort Sill, all launchers must be within 150 meters of the firing point or use operations area (OPAREA) safety. Due to launcher firing hazard areas, serious injury or death can occur to exposed personnel (especially launcher chiefs riding in open hatches) should a nearby launcher fire.

Our solution to this problem was to designate a firing point commander-in-chief (CINC), usually the battalion Master Gunner, to monitor all activity

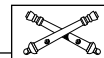
on the firing point. He places himself in an observation point and maintains radio communications on the battalion fire direction net with the battalion FDC and all BOCs. Also, he can “Check Fire” missions should a potentially dangerous situation develop or call out a launcher that is likely to miss its TOT window. Finally, the Master Gunner, fire direction chiefs, launcher section chiefs, platoon leaders and battery commanders verify the safety “Ts” before live firing begins. They ensure there are no questions or confusion on any safety computations.

**Conclusion.** Combining the four artillery tables live-fire qualification exercises into one live-fire event may appear to some that we are getting around meeting the requirements of the gates. In reality, we’re optimizing time, personnel, ammunition and land to ensure we can meet the critical gates of training and certification.

Each section, platoon, battery and the battalion must conduct the training and certification gates before qualification. The training artillery tables prepare each echelon for certification. The emphasis is on leader training and performing the tasks safely to standard without using ammunition to prepare each echelon for live-fire qualification. Each echelon prepares for its live fire by conducting dry-fire missions, also in multi-echelon training.

Through multi-echelon training, the battalion executes its METL tasks, batteries and BOCs train in their battle tasks and the control and delivery of fires, and launcher sections live-fire and

meet the artillery table standards for MLRS qualification. Multi-echelon training optimizes time, training areas, ammunition and personnel to live-fire qualify an MLRS battalion.



Lieutenant Colonel Gary A. Agron commands the 1st Battalion, 12th Field Artillery (Multiple-Launch Rocket System, or MLRS), 17th Field Artillery Brigade, III Armored Corps Artillery, Fort Sill, Oklahoma. He also commanded a firing battery in the 1st Battalion, 36th Field Artillery (8-inch) and Headquarters and Headquarters Battery, both in the 17th Field Artillery Brigade, VII Corps Artillery, Germany. He served as Executive Officer of 2d Battalion, 18th Field Artillery (MLRS), 212th Field Artillery Brigade, III Corps Artillery. He holds a Master of Science in Joint Systems Technology from the Naval Postgraduate School at Monterey, California. Lieutenant Colonel Agron gives up command on 24 July and will become the Deputy Fire Support Coordinator for III Corps at Fort Hood, Texas.

Major Steven Bratina is the S3 of the 19th Area Support Command in Korea. He served as a G3 Planner for III Corps Artillery and S3 of the 1st Battalion, 12th Field Artillery, 17th Field Artillery Brigade, at Fort Sill. He commanded Headquarters, Headquarters and Service Battery of the 6th Battalion, 37th Field Artillery (MLRS) in the 2d Infantry Division Artillery in Korea. He also served as an Armor Battalion Fire Support Officer with the 4th Battalion, 5th Field Artillery of the 1st Infantry Division (Mechanized) Artillery at Fort Riley, Kansas. He is a graduate of the Command and General Staff College, Fort Leavenworth, Kansas.

## Snow Hall Auditorium Named for GEN Dutch Kerwin

On 26 April, the Field Artillery School auditorium in Snow Hall, Fort Sill, Oklahoma, was named after General (Retired) Walter T. (Dutch) Kerwin, Jr., former 15th Vice Chief of Staff of the Army, combat veteran of two wars and distinguished Field Artilleryman. The dedication ceremony was held during the Senior Fire Support Conference with many of the Army’s most senior leaders present to honor General Kerwin, who responded with a brief speech.

The bronze plaque outside Kerwin Auditorium outlines some of General Kerwin’s many accomplishments: “...He saw combat during WW II in Africa, Sicily, Italy and France. While assigned to the 3d Infantry Division, he massed the fires of 28 Field Artillery battalions on Anzio Beachhead, Italy....he commanded the 56th Field Artillery Group of the XVIII Airborne Corps, 3d Armored Division Artillery, 3d Armored Division, II Field Force in Vietnam, and United States Forces Command. In 1974, he was sworn in as Vice Chief of Staff of the Army and remained until his retirement in 1978. General Kerwin became the President of the reestablished US Field Artillery in 1980, serving for 18 years. Redlegs around the world salute General Kerwin for his selfless service and dedicated leadership of the Field Artillery, the United States Army, and America.”

