Field Artillery

A Professional Bulletin for Redlegs

September-October 2000

Developing Adaptive Leaders

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INTERVIEW

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Front Cover: Adaptive leaders in the making—from left to right: SFC Tim Rex, Operations NCO; MAJ Mark Higginbotham, S3; and LTC Pete Baker, Commander of 1-14 FA, 214th FA Brigade, Fort Sill, Oklahoma. *(Photo by Linda A. Young, Fort Sill TSC)*

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

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The Field Artillery in Transformation

Gunners of C/1-37 FA of the initial BCT prepare to conduct an out-of-traverse fire mission with their M198 at Fort Lewis.

Last October, at the Association of the United States Army (AUSA) convention in Washington, DC, the Chief of Staff of the Army (CSA) outlined his vision for a bold and rapid transformation of the Army. General Eric K. Shinseki's vision is to create an irreversible momentum that will transform us into an Army that has the responsiveness and dominance required to support our national strategy, that can project land combat power anywhere in the world in a matter of hours and is decisive at any point on the operational spectrum, in any location, in any environment. This force will be more lethal, more survivable and more sustainable than we are today. It will be a full-spectrum force, capable of battlefield dominance in every type of engagement from stability and support operations (SASO) to operations in a major theater of war (MTW).

The transformation process will impact the entire Army, including everything from the personnel system, recruiting and leadership development to the officer and NCO education systems (OES/NCOES). As part of the transformation process, the Field Artillery and Fort Sill also will rapidly and dramatically change. This is not a conservative process—it's a bold and ambitious change. Ours will be a very different Army in the year 2020.

I am enthusiastic about the revolutionary improvements and possibilities that the transformation presents. Fort Sill and the Field Artillery are committed to the Army and to helping the CSA achieve his vision.

Transformation to the Objective Force. The goal of the transformation effort is to implement an "objective force" design by 2010 to 2012. The objective force's operations and organization are still largely conceptual, and no decision has been made concerning its force design, but its construct will be centered around the future combat system (FCS) and a product of doctrine, technical maturation and affordability.

It's important to note that doctrine is leading the technology. The Army knows where it wants to go and how it wants to get there and is developing the technologies required to achieve a specific set of capabilities for the objective force.

As milestones on the path that will take us to the objective force, we will field two initial and six interim brigade combat teams (BCTs). Both organizations will be optimized for small-scale contingencies (SSC) and require augmentation to operate in an MTW.

The two initial BCTs will be fielded at Fort Lewis, Washington, in FY01 and FY02. 1st Battalion, 37th Field Artillery, 2d Infantry Division Artillery, is converting to the initial force design now, and 2d Battalion, 8th Field Artillery, 25th Infantry Division (Light) Artillery, will convert next year.

Fire support in the BCTs will be effects-based rather than delivery system-based. A fires and effects coordination cell (FECC) will be in the brigade's headquarters and headquarters company. The direct support (DS) FA battalion commander will serve as the effects coordinator (ECOORD).

The battalion fire support element (FSE) and fire support teams (FISTs) will be organic to each maneuver battalion's headquarters and headquarters company. This configuration will capitalize on the organizational training and leadership development synergies of the transformation.

The DS weapons system for the initial BCTs will be the M198 155-mm towed howitzer. Although the subsequent six interim BCTs have a requirement for a self-propelled interim armored vehicle (IAV) 155-mm howitzer, its affordability is at issue. Our fallback position will be to use the new towed lightweight 155-mm howitzer (LW 155) in the interim BCTs.

The success of the initial and interim brigades will create a bridge for transformation to the objective force.

Field Artillery Vision for the Future. Fire support and the Field Artillery are essential elements of the CSA's transformation vision. Our Field Artillery vision remains constant and is entirely consistent and supportive of the transformation process and objectives. The four tenets of the Field Artillery vision—effects-based fires, organizational transformation, dynamic force tailoring and munitions centrality—help focus our efforts in transformation and allow us to accommodate rapid and revolutionary change.

The Field Artillery transformation and modernization strategy is guided by the overarching tenets of the FA vision. Our strategy facilitates rapidly deploying firepower with higher lethality per system or munition and leverages munition centrality to achieve required battlefield effects.

Weapon systems currently under development are fundamental to transformation and the objective force. Crusader will support both the legacy and transformation force and serve as a technology carrier for the future combat system. The prototype is currently firing at Yuma Proving Ground, Arizona, at ranges in excess of 40 kilometers. We are on track to reduce Crusader's weight

Photo courtesy of Team Crusader/United Defense

Crusader prototype firing in testing at Yuma Proving Ground in Arizona.

to 40 tons and are fully funded to field 480 systems.

Crusader will support the transformation originally as augmentation to the interim force and will be a critical component of the Army's counterattack corps composed of modernized and digitized divisions equipped with the M1A2SEP (system enhancement program) tank, M2A3 Bradley infantry fighting vehicle, M270A1 multiple-launch rocket system (MLRS) and the AH-64D Longbow Apache and RAH-66 Comanche helicopters. Crusader quite possibly will be in the force until 2040 and beyond.

The lightweight 155-mm howitzer is a joint United States Marine Corps/Army development effort that also plays a critical role in the transformation process. It may provide fire support for the interim BCT. The initial design howitzer has fired thousands of rounds, and the prototype was delivered in June with seven more to follow. Production begins in 2002.

The high-mobility artillery rocket system (HIMARS) also supports the Army's transformation vision. It enjoys great support throughout the Army and, as part of a follow-on force, will augment the initial and interim brigades.

These are exciting times. The Army is transforming into a more responsive, more deployable and more lethal land combat force. We fully support this transformation and will transform as well.

The Field Artillery is and will continue to be an integral part of the combined arms force that will prosecute America's land campaigns today or in our transformed Army of the near future.

First ARNG Officer Commands AC FA Battalion: AC-RC Exchange

Lieutenant Colonel Kenneth J. Lull, formerly of the Colorado Army National Guard (ARNG), came on active duty to take command of the 1st Battalion, 17th Field Artillery, part of the 75th Field Artillery Brigade of III Corps Artillery, Fort Sill, Oklahoma, on 27 June. He is the first ARNG officer to take command of an Active Component (AC) FA unit under the AC-Reserve Component (RC) exchange program and the fourth FA officer in the program.

The AC-RC exchange program fills selected command and senior staff positions from the alternate component to share expertise, management practices and leadership and promote the interoperability of the components into one seamless Army.

LTC Lull

On 16 April, Lieutenant Colonel Gary D. Giebel became the third AC Field Artilleryman in the program to assume command of an ARNG unit—the 2d Battalion, 157th Field Artillery, part of the 169th FA Brigade, in Longmont, Colorado. Lieutenant Colonel John R. Hennigan, Jr., AC, commanded the 1st Battalion, 141st Field Artillery, Louisiana ARNG, 1996 to 1998, and Colonel Mark A. Graham, AC, commanded the 40th Infantry Division (Mechanized) Artillery, California ARNG, 1998 to 2000.

2001 Senior Fire Support Conference

Planning is underway for the next Senior Fire Support Conference at the Field Artillery School, Fort Sill, Oklahoma, the week of 23 April 2001. The focus of the conference will be the Army's Transformation and the FA's initiatives in support of it.

As in past years, Senior Fire Support Conference invitees include Army corps and Marine expeditionary force (MEF) commanders; Reserve Component (RC) and Active Component (AC) Army and Marine division commanders; FA active and selected retired general officers; Training and Doctrine Command school commandants; AC and RC Army corps artillery, FA brigade, division artillery and Marine regimental commanders and their command sergeants major (CSMs); and US Field Artillery Association corporate members. FA commanders and their CSMs will check into the conference on Sunday. Other participants will check in on Tuesday, unless they want to participate in the golf scramble on Tuesday—they then can check in on Monday.

More details of the conference and the week's schedule will be in the November-December Red Book, including a conference email address. Until that time, email questions about the conference to Colonel Ted Janosko, Deputy Assistant Commandant of the FA School, at janoskot@sill.army.mil. Official invitations to the conference will be mailed in January 2001.

General James L. Jones, Commandant of the Marine Corps

Fixing the Marine Artillery

Interview by Patrecia Slayden Hollis, Editor

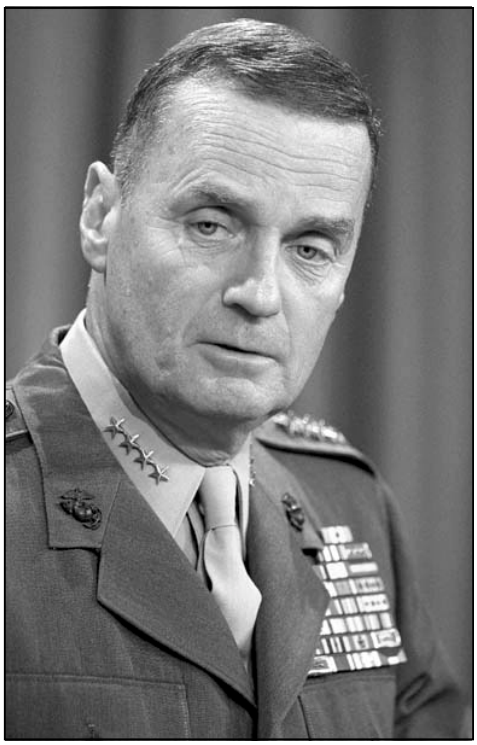
Q Shortly after you became Commandant of the Marine Corps in July 1999, you issued a directive to review the role, mission, organization, doctrine, structure and training of the Marine Corps Field Artillery comprehensively as one of your priorities. Why the review, and in general, what were the artillery's deficiencies that called for the review?

A In the past 10 or so years, we have decreased our fire support systems too far. We got rid of a lot of our artillery weapons in the name of efficiency, in the name of mobility, and we hinged ourselves to one Field Artillery system—the M198 towed 155-mm howitzer. The M198 is a wonderful artillery piece, but it's not very mobile.

At the time, the Marine Corps had made a conscious decision to shift to aviation as kind of "a flying artillery system." This placed our ground-based fires out of balance with the maneuver forces it supported.

As a division commander [2d Marine Division], I had a difficult time weighting the main effort and shaping my battlespace with ground fires without taking artillery away from other units. A division commander can use his four FA battalions as he sees fit, but he does not have enough artillery [one FA battalion for each of his three infantry regiments and one FA battalion for his division's tank battalion and light armored reconnaissance battalion]. I had to rely on fires from Marine aviation, which is adversely affected by weather; naval surface fire support; or the Army's MLRS [multiple-launch rocket system], which was not always available.

We have atrophied our Marine ground fires inventory to a dangerous point. We're out-gunned and out-ranged by just about everyone. So I am fixing the artillery—bringing robustness back to the Marine artillery. And since I ordered the review of the Marine artillery, I've decided we need to look at fire support for the entire MAGTF [Marine air ground task force] to ensure it has an integrated, flexible system.



Q You've come up with a plan for a triad of firing platforms to give the Marine Corps FA more flexibility. What are the three platforms and how will each contribute to the fight?

A The analyses that we've conducted recommended a review of our total capabilities with particular emphasis on the high- and low-end systems. I haven't made any formal decisions on the third leg of the triad of systems, but we're bringing two legs of the triad into the inventory. One is the M777, the lightweight 155-mm howitzer [also called the LW 155] being jointly developed by the Army and Marine Corps. The M777 will have towed artillery digitization [TAD].

We're moving ahead to replace all M198s with the M777, beginning in 2003. The M777 will be our direct support [DS] workhorse for the divisions.

The other leg is HIMARS [high-mobility artillery rocket system]. We're replacing two of the five M198 battalions in our Reserve artillery, the 14th Marines, with HIMARS battalions, hopefully, in 2006. As a matter of fact, at a recent conference at Camp Lejeune [North Carolina], a number of Marine generals fired HIMARS and were *very* impressed. Eventually, we may want HIMARS in the active force as well—say a HIMARS battery per division. But, initially, the system will go into the 14th Marines, giving us the added capability during a major theater war.

HIMARS will be our general support system for the commander, giving him the flexibility to weight the main effort, provide counterfire and shape his battlespace without pulling DS systems away from other units. HIMARS is a critical asset to shore up our paucity of ground fire support capabilities.

Now, the final system of the land-based fire support triad is yet to be determined. That will be the very lightweight expeditionary fire support system [EFSS]. We must project credible forces ashore to secure limited objectives and, if it's in our national interests, hang on to those objectives until our forces are relieved by more sustainable land-based forces. Such operations require a lot of coordination and a single integrated system of lethal and nonlethal fires developed from air-, ground- and sea-based assets.

Within that expeditionary context, the EFSS' principal role will be to support the air assault elements of the STOM [ship-to-objective maneuver] during OMFTS [operational maneuver from the sea, beginning in the 2015 time frame] until such time as other indirect fire support assets can be brought to bear on enemy forces. The challenges are to provide all-weather, continuous fire support to match our maneuver and mesh the operations of decentralized operations in STOM with the centralized fire support command and control system.

We're currently studying the remaining fire support deficiencies and determining the requirements for the EFSS. Marines in my generation grew up with the 105-mm howitzer and shed sincere tears when it was taken away. So, the final EFSS choice could be a 105 or a mortar or some other advanced system. If the solution is a mortar, the system will remain an infantry weapon. The basics of small-unit fire support operations in STOM won't change significantly enough to justify taking the infantry commander's "hip-pocket artillery" away.

Q *Since 1988, the Marine Corps' artillery has been reduced by approximately 57 percent. If the Marine Corps adds HIMARS and the very lightweight EFSS to the force, will that result in reductions in 155-mm cannons? If you add new systems and don't reduce the number of 155 systems, it will call for more Marine Field Artillery personnel—is that an option?*

A Although we're always looking for ways to get lighter, I do not foresee a reduction in the number of artillery pieces in the active force. The 155 howitzer design and family of munitions, both current and future, make it a very capable and flexible system.

The intent behind "fixing fires" is to ensure we have the fires to accomplish all our warfighting requirements—including sea-based, air-based and land-based fires. We have a modernization plan for sea-based fires when the technology matures for precision guided and other systems to come on line. We are adequately invested in aviation-based fires. But we learned in Kosovo that if we're going to fight in different terrain and different weather conditions, we must have all-weather, all-the-time fire support. Artillery gives us that capability.

To increase our ground-based fires, we're looking at several new artillery systems—such as fire support weapons, a ground weapons locating radar and others. But we're also looking at how we train and organize our fire supporters. So, yes, increasing the number of Field Artillerymen in the Marine Corps is an option.

In fact, I'm bringing back the ANGLICO [air ground naval gunfire liaison company] in its original form. It was a mistake to get rid of our ANGLICOs.

We have an ongoing project to free up Marines in the Corps by replacing selected positions with civilians. In our modest reform just this year, we have identified almost 2,500 Marines who are going out into the operating forces. At some point, I may be willing to go forward to the Secretary of Defense to recommend the Marine Corps have a modest increase in strength. We absolutely must shore up our operating forces, and our artillery units are critically deficient.

Q *What changes are you making to personnel management policies and training to ensure your future fire support personnel have the competencies you need, including flexibility and adaptability?*

Photo by J.B. Walker; Courtesy of Leatherneck Magazine

L to R: Sergeant Major of the Marine Corps Alford L. McMichael and General Jones attending the first annual Sergeants Symposium in March 2000.

A The road ahead in the Corps for Marines in combat arms and supporting arms is to work in their MOS [military occupational specialties] as long as possible. The Marine Corps, not the individual, must make sure our Marines have the opportunity to progress and become experts in their field. That's particularly important in the FA, in the fire support business.

As fire supporters, Marine artillerymen must integrate the MAGTF's fires from all sources. Failure to develop professional fire supporters could result in disaster.

As far as training is concerned, the Army will continue to teach Marines the art and science of Field Artillery. The Army is the best in the world at it. Our basic schooling develops the Marine expeditionary mindset.

Q *The Army's interim brigade combat teams (BCTs) are being designed to be lighter and more deployable to contingencies but have enough combat power to make a difference until heavy forces arrive. One could make a case that the Marine Corps, with its OMFTS, and the Army, with its interim BCT transformation, are developing similar combat capabilities. Do you see the development of these concepts as fulfilling complementary roles and missions, and how?*

A The operational concepts complement each other—a certain amount of redundancy on the battlefield is necessary. US forces don't want to have "just the right amount" of one capability because, sooner or later, we'll come up short.

Point Number Two: The battlefield will not be crowded with US forces. In each major regional contingency, we have advanced, detailed plans that are fully integrated with the Army's plans. Today, we know exactly what we're going to be doing and where and the Army knows what it's going to be doing and where in each scenario. The difference is the Marines will come in by ships and the Army by strategic lift.

Q *In recent years, there has been a push for greater use of UAVs [unmanned aerial vehicles], robotics and precision strike munitions. Is the Marine Corps' requirement for volume, area and massed fires diminishing?*

A We need both precision and massed fires, depending on the scenario. In conventional warfighting in a major regional contingency, we now have a shortage in our ability to mass fires and must depend on the Army for support.

UAVs and precision fires are and will continue to be important, especially in urban terrain. But precise fires require precise targeting, and we won't always know exactly where every target is. Differences in terrain, the conditions and the type of enemy targets call for different tactics and munitions. We cannot afford to get into an either/or situation.

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

A I would like to tell artillerymen the story of my "coming of age" in regard to fire support in Vietnam in 1968. Perhaps this will help explain why one of my priorities is to fix the Marine artillery.

Although I spent most of my 1967-1968 tour with Golf Company, 2d Battalion, 3d Marines, I assumed command of Fox Company for about two weeks in 1968. Fox Company was assigned to patrol the Laotian border up near Khe Sanh.

At the end of the day on 28 May, we positioned ourselves on a ridge line that seemed to have good fields of fire and be defensible. We were within range of the North Vietnamese artillery across the Laotian border near a place called Co Roc. The North Vietnamese guns were well emplaced in caves—very hard for artillery or aviation fire support to get at. (Co Roc did the shooting during the siege of Khe Sanh.)

In the wee hours of 28 May, Fox Company was assaulted by a North Vietnamese battalion that had just come across the border. We were dug in, but it was clear that the sheer numbers of the enemy would overcome us.

We had a wonderful artillery spot team with us that started calling in artillery defensive fires and "walking" the fires back toward us. About nine batteries, both at Khe Sanh and with my 2d Battalion, 3d Marines, fired in direct support of Fox Company—105s and 155s—virtually nonstop from 0200 until 1000 that morning.

Photo Courtesy of Marine Corps Gazette

A Marine Corps MV-22 Osprey prepares to deliver an M777 lightweight 155-mm howitzer.

Usually, the North Vietnamese broke contact at daylight because they knew helicopter gunships and Phantom jets would be on station. But such prospects did not dissuade this North Vietnamese battalion. Daylight came, and the battalion started attacking even more aggressively. Before it was over, some of us had to fight the North Vietnamese inside our perimeter.

The majority of our fire support came in with devastating accuracy and extraordinarily close—within meters of us. Artillery and our 81-mm and 60-mm mortars firing nonstop saved the day, essentially decimating a North Vietnamese battalion. Fox Company had very few casualties.

One of the things that helped save us was that the enemy used green flares to start the attack, and so we reasoned that red flares would stop it. We fired red flares from our line, and it broke up the attack. And by the time the North Vietnamese got reorganized and began attacking again, we'd adjusted our calls-for-fire to provide a safety net of steel between us and them.

The combination of the courage of the company and the accuracy and responsiveness of our organic fire support is what allowed Fox Company to walk off that hill that day—I'm convinced of it.

As the Commandant of the Marine Corps, I'm determined to ensure Marines will have the fires they need to "walk off the hill" on any future battlefield.

It's an exciting time to be a Marine artilleryman.

★★★★

General James L. Jones became the 32d Commandant of the Marine Corps in July 1999. In his previous assignment, he was the Military Assistant to the Secretary of Defense. Also in Washington, DC, he was the Deputy Chief of Staff for Plans, Policies and Operations for Headquarters, Marine Corps, and Director of the Expeditionary Warfare Division (N85) in the Office of the Chief of Naval Operations. He commanded the 2d Marine Division, Marine Forces Atlantic, at Camp Lejeune, North Carolina. While Deputy Director, J-3, of the US European Command in Germany, he was assigned as Chief of Staff of Joint Task Force Provide Promise for operations in Bosnia-Herzegovina and Macedonia. He also participated in Operation Provide Comfort in Northern Iraq and Turkey as the Commanding Officer of the 24th Marine Expeditionary Unit out of Camp Lejeune. He commanded the 3d Battalion, 9th Marines in the 1st Marine Division at Camp Pendleton, California, and five infantry companies, including two in Vietnam.

L to R: SFC Tim Rex, Operations NCO; MAJ Mark Higginbotham, S3; and LTC Pete Baker, Commander of 1-14 FA

Building Our Intellectual Capital

The Need for Adaptive Leaders in Today's Army

by Major Steven A. Stebbins, USAR

Photos by Linda A. Young, Fort Sill TSC

It's time to raise the bar for leader development—today's leaders must think faster, deeper and broader than ever before. Rapid communications and transportation, new technologies, grueling operations tempo (OPTEMPO), diverse missions and new threats stretch our leaders' abilities to the limit. In a single year, a lieutenant could deploy to the National Training Center (NTC), Fort Irwin, California; field complex new equipment; provide military support to civil authorities; and conduct peacekeeping operations abroad. Each scenario is unique with its own particular challenges.

How many civilian leadership roles are there with requirements so broad? Military leaders are expected to be warriors, diplomats, technicians, teachers, project managers, policemen, humanitarian assistance providers and media relations specialists. And the list grows every year. There is, perhaps, no other vocation with so many potential demands. Developing adaptive leaders who are effective in each situation is critical to the Army's success.

The Challenge. Our leader development programs teach the military decision-making process (MDMP) in a very structured framework. The structure has evolved over centuries, propelled by numerous tactical and technological developments. In the 19th century, the industrial revolution and the nation-in-arms combined the effects of technology and the demands of mass armies to drive the need for centralized, efficient decision-making.

The Prussian general staff system met this need best, and most modern armies adopted the Prussian model. It became the basic model for staff organization and military decision making through the 20th century. Centralized planning and clearly defined doctrine became

common to all modern armies, and the analytical, objective techniques of military science overshadowed the intuitive, subjective nuances of military art.

This system worked well through most of the 20th century, but now we're entering the post-industrial age. Many call this new era the Information Age. Its characteristics are ever-faster communication and increasingly sophisticated means for managing information. Since the essence of war centers on the human mind in that its objective is for one party to compel another party to decide to submit, the developments of the Information Age profoundly affect the way we wage war.

Some experts believe these developments constitute a revolution in military affairs. Military theorists pronounce that new technology and the decline of the nation state have ended the era of massed and sustained land wars. Instead, future conflicts will be centered on a wide variety of antagonists and threats that most militaries previously viewed as distractions, at best. Terrorism, information warfare, peacemaking and peacekeeping are where we should focus our defense efforts, according to some.

Whether or not these changes are truly revolutionary, clearly the world is changing and the demands on leaders are intense. In a complex, fast-moving environment, leaders often won't have time to stop and think. Yet, they'll need to be incredibly thoughtful. In a faster world linked by global communications, the decisions of leaders at the lowest levels can have major significance. Flooded with information, these leaders will need the intuition and confidence to think without thinking and to act decisively and do the right thing. This is the essence of military art.

But since the death of Clausewitz, most military theorists have focused on military science. Today, professors of military science (PMS) develop most of our new lieutenants. Our training programs stress highly structured decision-making processes and countless lists of principles and rules, which is not necessarily a bad thing. The techniques of military science provide practical guidelines and common intellectual frames of reference. However, to quote now-retired Brigadier General Huba Wass de Czege in a 1984 *Military Review* article, "The art of war consists of the artful practice of the science of war."[1] To win on future battlefields, our leaders will need to build on their foundation of military science to become deft practitioners of military art.

To be modern masters of the military art, leaders must be highly adaptive. They must be able to adapt their thinking and behaviors to the wide range of situations they'll face. Doing this successfully requires several basic competencies: creativity, resourcefulness, initiative and decisiveness; a profound understanding of doctrine and theory; highly developed intuition and conceptual thinking; the ability to see patterns and identify key information; strong cultural and political sensitivity; systems perspective (ability to see connections between conditions and events); and a tolerance for ambiguity.

Through rigorous study, a broad range of experiences and constant reflection, adaptive leaders develop the intellectual ability to understand diverse and complex situations, cope with a flood of information and establish the clarity and focus to act decisively.

Adaptive Leadership. The first step toward becoming an adaptive leader is to make a personal commitment. It's a commitment to curiosity, to being an active thinker and a student of one's profession. Learning how to prepare an FA support plan or fire support execution matrix is necessary, of course, but it isn't sufficient. Beyond mastering the technical details of his functional specialty, the adaptive leader needs a broader knowledge of the military art and the world at large.

Armies function in the context of national and world events, and adaptive leaders understand this context. They develop a sense for how seemingly unrelated forces and events interact and how they can shape their environment. Developing this "feel" takes time; indeed, since our world is constantly changing, our leadership sense is developing constantly. Purposeful development occurs through active engagement and reflection. Without commitment there can be no deliberate growth.

Growth can flourish only in a supportive environment. As does all truly effective leadership, adaptive leadership must be built on a foundation of trust. Adaptive leaders must know they have the trust of superiors and subordinates alike. Otherwise, they lack the confidence to think creatively and act decisively.

Lately, we have read a lot about a lack of faith in senior leaders.[2] Careerism, micro-management and the zero-defects mentality, constant criticisms since the Vietnam War, seem to be increasingly common complaints. Good professional development counseling is rare. Under these conditions, building trust is hard.

What can we do to fix this and create the right sort of environment for developing adaptive leaders? Above all, developing others must be the top priority of every leader. We need to recognize that teaching is at the core of leadership.[3] Once we accept that at all levels, the fear and insecurity that drives the zero-defects mindset and its micro-management behaviors will dissipate. We'll come to recognize that developing leaders takes time, and that we learn best through our failures.

The change has to start at the very top. Senior leaders must clearly articulate the new behaviors and skills expected of all leaders, then model them consistently and conspicuously. They must

Adaptive leaders have the intellectual ability to understand diverse and complex situations, cope with a flood of information and establish the clarity and focus to act decisively. *L to R: 1SG Mark Walters and SSG Kyle Cunningham, 1-14 FA.*

hold subordinates accountable for developing future leaders. It will be hard. Attitudes and habits developed over decades don't change overnight.

Recognizing this, the Army should consider executive coaching for its senior leaders. An increasingly common civilian practice, executive coaching involves working with a professional coach to prepare a personal development plan and receive periodic one-on-one developmental feedback. The coach, often a trained psychologist, offers a more objective perspective than could someone from within the executive's organization. Their objectivity and professional training often make them highly effective in coaching senior leaders. Supported by their coaches, senior leaders then could model effective development practices for the rest of the Army.

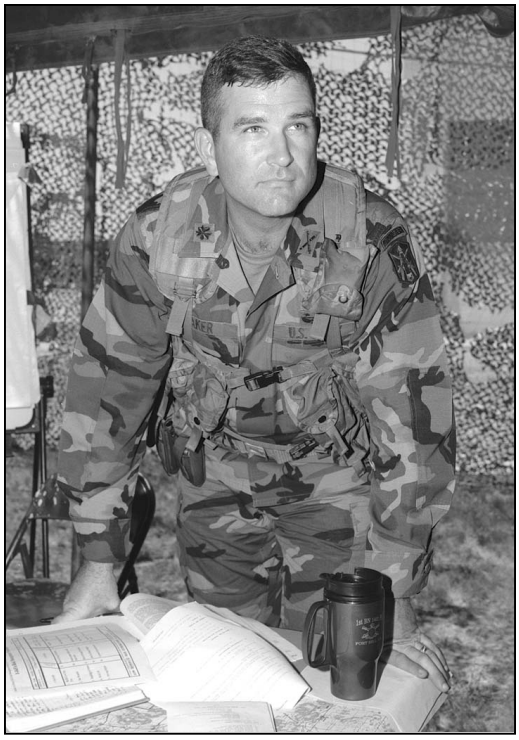
All leaders need to have a basic set of coaching skills. Regrettably, we don't do a very good job of teaching these skills. As a result, many leaders don't really know how to develop other leaders. They have difficulty identifying and assessing the behaviors and cognitive skills associated with specific leader competencies. They aren't trained in preparing individual development plans, so those plans, while sorely needed, are virtually non-existent. We can't blame the leaders; the Army hasn't trained them in the skills to do the job.

There are several things we could do to close this skill gap. Beginning at our officer basic course and NCO primary leadership development course (PLDC), we can introduce training in leadership competencies and how to identify and assess associated behaviors and thinking skills. Training in coaching skills, particularly effective listening, would be essential. Role-plays, videotaped and with rigorous feedback, would become the core of this training. Lieutenants and junior NCOs would leave the Field Artillery School at Fort Sill, Oklahoma, with a basic understanding of the leader development skills they could practice in their assignments. Most importantly, they would understand the level of coaching they should expect from their leaders and commanders.

Advanced course students, both officer and NCO, would revisit the basics, complete with role-plays, then would move into development planning. They would learn how to facilitate the purposeful growth of subordinates through planned development activities and timely competency-based feedback. To further their own development, advanced course students could undergo a personal assessment through a combination of formal testing, simulations and interviews. They would receive thorough and insightful feedback from a trained professional who would deepen their self-knowledge, a basic requirement for any leader.

Using this new self-knowledge to guide their own development, these leaders would return to the field as more active learners and caring coaches. Pre-command course students could undergo similar education.

A focus on active listening, deep personal insight and regular coaching would be a big change for most leaders. In a make-it-happen culture with constant personnel churn, taking the time necessary to nurture and grow thoughtful leaders is hard. But it must happen. Unless we make the time to coach subordinates and build deeper trust between leaders and led, we won't have the environment necessary for developing adaptive leaders.



Trained intuition is the core intellectual competency of adaptive leadership. It is what enables leaders to think without thinking, to assimilate and act upon large amounts of information quickly.

Trained Intuition. Artillerymen face unique challenges in developing the intellectual habits of adaptive leaders. The technical aspects of our craft stress precision, highly structured planning and unwavering execution of the plan. These characteristics have been essential to indirect fire gunnery and the complex fire support planning processes that have been the heart of our training since the First World War.

Unfortunately, the attitudes required for technical success can undermine the attitudes required of adaptive leaders. It is only a short step from precision to a zero-defects mentality and micro-management. Strict adherence to structured planning processes easily can lead to a lack of creativity and originality. Unwavering execution of the plan teaches none of the flexibility required of adaptive leaders. The intellectual challenge for artillerymen is to retain the precision, attention to detail and objectivity required for technical excellence, while cultivating the creativity, flexibility and intuition essential to adaptive leadership.

That trained intuition is the core intellectual competency of adaptive leadership. It is what enables leaders to think without thinking, to assimilate and act upon large amounts of information quickly. When intuition is highly developed, it manifests itself in "flow" experiences. We've all had these experiences. Think of a time when things were happening so fast that you didn't have time to think yet had to decide and act—perhaps during a Combat Training Center (CTC) rotation or while conducting an airborne assault. You knew what needed to be done and did it, period.

FM 22-100 Army Leadership defines intuition as "direct, immediate insight or understanding of important factors without apparent rational thought or inference." It further states that "the ability to assess a situation accurately and reliably—a critical tool in the leader's arsenal—requires instinct and intuition based on experience and learning."[4]

The key concept here is *trained* intuition. It's not just a gut feel; one doesn't just wing it. As General Wass de Czege asserts, "…the art of war demands disciplined intellectual activity."[5]

Beginning with the study of core doctrine and tactics, young leaders develop a common framework for how to think about the problems of their profession. Through early experiences, they learn

how to apply those concepts in practice. The challenge is to continue that developmental process beyond the narrow range of tactical problems.

Now the coaching and teaching skills of mid-level and senior leaders becomes important. They must develop the skills of the Socratic teacher who helps his student discover new insights through deliberate and patient questioning. To quote Colonel Rhett A. Hernandez ("Ten Top Traits for Future Leaders," May—June 1999), leaders must learn to "listen more and talk less."[6] They must learn to understand and appreciate diverse personality types and learning styles so they can tailor their coaching to the individual. Recognizing that the pace of day-to-day operations will only increase, they must see every event, mission or tasking as a learning opportunity and exploit it as such.

In *Leadership without Easy Answers*, Ronald Heifetz describes the leader's role as a teacher: "Unlike rote learning situations in which the answer is supplied, though paced, by the teacher, adaptive learning situations demand that people discover, invent, and take responsibility. Leadership is a special sort of educating, in which the teacher raises problems, questions, options, interpretations, and perspectives, often without answers, gauging all the while when to push through and when to hold steady....The leader as educator has to engage the parties in a process of inquiry that accounts for their fear or pain, if learning is to be produced."[7]

The senior leader becomes a mentor who guides his juniors through learning experiences, simultaneously developing their intellectual discipline and creativity. Guided by his mentor, the developing leader learns to think more broadly, deeply and creatively. He learns to think about thinking and to see and understand broad concepts and connections. Rather than becoming a prisoner of doctrine, he uses his solid doctrinal foundation to inform and guide his creative thinking. Through study, experience, feedback and reflection, he deepens his understanding and knowledge. He becomes a continuous learner whose intuition develops constantly.

Fortunately, today's Army already provides many of the core developmental experiences that leaders require. We give leaders responsibility early, rotate them through a wide range of jobs frequently and return them to the schoolhouse regularly. Junior leaders learn the fundamentals of leadership quickly, which is why they are so marketable in the corporate sector. Many civilian leaders, including renowned leadership scholar Warren Bennis, credit their military experience for teaching them the basics of leading people.[8]

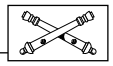
While our leader development programs are among the best at instilling the basics, they are less effective at developing leaders with the breadth and depth required of modern adaptive leaders. To address this shortcoming, we must create an ever-widening range of experiences for the developing leader. Increasingly complex simulations, contemporary case studies and diverse assignments are only a few possibilities. Some of these initiatives are already in progress, such as the training programs described in the April 2000 issue of *Soldiers* magazine. It describes Army Experiment 6 that developed "…adaptive training programs that stress how to think."[9] [Also see the article "Training Adaptive Leaders—Are We Ready?" by Dr. Karol G. Ross in this edition.] The objective is to create situations that expose the developing leader to new challenges and perspectives, which his trained mentor then can help him to explore. Both mentor and student become partners in learning, increasing the Army's intellectual capital together.

This growth of intellectual capital serves two purposes: it increases the Army's effectiveness as a learning organization and increases the individual's effectiveness as a leader. The two are intertwined. Just as an organization's results largely reflect the individual decisions of its members, an individual's results often reflect the culture and collective knowledge of the organization. Creating a vigorous culture of engaged, insightful and mutually supportive active learning will improve both.

Conclusion. In the end, the Army's capacity to practice adaptive leadership is a function of its intellectual capital. We must become a more thoughtful Army while retaining our ability to act decisively. This is the real paradox of adaptive leadership and the real cultural challenge for our Army. In an organization that values doers over thinkers, we need to think more about thinking so we can act decisively when there is no time to think.

This takes leader development to another level. It places a premium on the leader's thinking skills, in addition to his interpersonal and management skills. Developing adaptive leaders is more a process of constant nurturing and less a process of completing required counseling sessions or hurdling key career "gates."

The key elements of developing adaptive leaders are instilling a commitment to active and continuous learning, training leaders in the art of developing others and then challenging them with increasingly complex and diverse learning experiences. The result will be adaptive leaders whose *trained intuition* makes them nimble practitioners of the military art.



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Endnotes:

1. Huba Wass de Czege, "How to Change an Army," *Military Review* (Vol. LXIII, No. 3, March 1983, reprinted in *Military Review*, Vol. LXXVII, No. 1 January-February 1997).

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9. High, 15.

Leadership Development for the IBCT

by Lieutenant Colonel William M. Raymond, Jr.

On the battlefields of tomorrow, America's sons and daughters demand leaders of character who are *adaptive* and use *initiative within their commanders' intent* to accomplish the mission. The Initial Brigade Combat Team's (IBCT's) Leader Development Program, especially its quarterly leadership sustainment training, will help develop such adaptive, decisive leaders.

On 12 October 1999, Chief of Staff of the Army General Eric K. Shinseki announced his plans to transform the Army into an "objective" force that would be more responsive, deployable, agile, versatile, lethal, survivable and sustainable. Since that announcement, there has been widespread interest in the activities going on at Fort Lewis, Washington, where the first two brigades are converting into "initial" brigades equipped with medium-weight, light armored vehicles and a host of new capabilities.[1] These IBCTs will have unprecedented lethality, mobility and survivability; deploy anywhere in the world within 96 hours; and be capable of conducting full-spectrum operations.

The new brigade will have unique capabilities. (See Figure 1 for the organization of the IBCT.) This IBCT will have three infantry battalions with combined arms companies and one reconnaissance, surveillance target acquisition (RSTA) squadron, significantly increasing the number of combat arms soldiers as compared to the number in the typical light or heavy brigade.

Fire support teams (FISTs) with Striker-like vehicles and operations are organic to each maneuver company. The IBCT has an unprecedented number of mortars—a total of 66 mortars: 60-mm, 81-mm and 120-mm mortars at the company and battalion levels.

The RSTA squadron is a unique organization with three reconnaissance troops and a surveillance troop. The squadron combines the capabilities of cavalry scouts and selected military in-

telligence assets, including unmanned aerial vehicles (UAVs), sensors and counterintelligence teams to serve as the IBCT's primary source of combat information.

A fires and effects coordination cell (FECC) is replacing the fire support element (FSE) at the brigade headquarters. The FECC will provide brigade counterfire and deep operations and serve as a focal point for coordinating and synchronizing both lethal and nonlethal assets in support of the commander.

The first IBCT's FA battalion—the 1st Battalion, 37th Field Artillery (1-37 FA), the former direct support battalion for the 2d Infantry Division based at Fort Lewis—has three batteries, each with four M198 155-mm howitzers (3x4). The battalion also has a target acquisition platoon with one Q-36 and one Q-37 Firefinder radar and a meteorological section.

The brigade support battalion (BSB) will accomplish execution-focused support that's integrated fully with the IBCT's concept of operations and scheme of maneuver.

While these capabilities are certainly new and noteworthy, one of the most revolutionary of the IBCT's initiatives is its Leader Development Program. The program includes the one-time initial leader "conversion" training (a Tactical Leaders Course and Senior Leaders Course). In addition, the program has quarterly sustainment training that includes NCO educational development and nested leadership training with multiple vignettes from the brigade to the platoon levels.

This article provides an overview of the type of leader the IBCT demands and describes the key components of the IBCT Leadership Development Program.

- Brigade Headquarters and Headquarters Company (HHC)[1]
- 3 Infantry Battalions with Combined Arms Companies[2]
- Reconnaissance, Surveillance and Target Acquisition (RSTA) Battalion[3]
- Field Artillery Battalion[4]
- Brigade Support Battalion (BSB)
- Anti-Tank Company
- Signal Company
- Military Intelligence Company
- Engineer Company

[1]Location of the Fires and Effects Coordination Cell (FECC).
[2]Includes 20 mortars per battalion (60-mm, 81-mm and 120-mm).
[3]Includes six 120-mm mortars.
[4]Has 12 M198 howitzers, a target acquisition platoon and a meteorological section.

Figure 1: The Initial Brigade Combat Team

Overview. The 21st century operational environment our Army confronts is extremely fluid and demanding. Full-spectrum operations range from stability and support operations, small-scale contingencies (SSC) and major theater of wars. These operations most likely will occur in complex terrain and urban environments. The increase in the number of unknowns that leaders could face in these environments increases the need for adaptive leaders. The IBCT operational and organizational concept (O&O) requires unique leadership training to prepare IBCT leaders for full-spectrum operations, precision internetted (digital tactical internet) combined arms fighting, dispersed and decentralized operations, and network-centric and leader-centric operations.

The IBCT O&O defines an adaptive leader as one who "influences people by providing purpose, direction and motivation while operating in a complex, dynamic environment of uncertainty and ambiguity to accomplish the mission and improving the organization."[2] Figure 2 lists the qualities of an adaptive leader.[3]

Given the distributive, decentralized and simultaneous operations an IBCT leader will confront over an expanded battlespace, the building of highly cohesive and trusting units is essential. The IBCT also must have leaders who can make decisions and act *within* their higher commander's intent.

How do we develop and train that type of leader? First, the leaders must be the primary experts and trainers to facilitate the building of cohesive, trusting units. Second, leaders must be trained initially to execute operations relative to the IBCT O&O and not based solely on their former experience as "light" or "heavy" fighters. Third, IBCT leaders must sustain leader training with a structured, comprehensive unit leader development program based on *FM 22-100 Army Leadership*. This program must be conducted quarterly to keep leaders within a band of excellence.

The purpose of the Senior Leaders Course was to teach the senior IBCT leaders about the uniqueness of their organization. Participants were the brigade commander and his battalion commanders and their respective staffs.

Initial Leader Conversion Training. The one-time leader conversion training consisted of the Tactical Leaders Course and Senior Leaders Course.

Tactical Leaders Course. The purpose of this course was to train leaders on how the IBCT fights, focusing on the squad, platoon and company levels. The Tactical Leaders Course participants were company and battalion leaders/staffs from across the IBCT—basically platoon sergeants to battalion commanders. The IBCT conducted five iterations of the course from May to August.

Each iteration consisted of two phases. The first lasted seven days. Three days were devoted to common core classes on the IBCT organization, adaptive leadership, operating in an SSC environment and developing training. Every IBCT tactical leader received the same core instruction.

During this phase, the tactical leaders received a one-hour class on fires and effects in the IBCT. This class discussed the FA Vision, specifically the paradigm shift to effects-based fires; the capabilities and organization of the FECC; fire support assets from the platoon to the brigade levels; and the 3x4 M198 FA battalion organization and operations. The class also discussed the integration of non-lethal effects and information operations into the IBCT's combined arms operations.

The next three days focused on unit-specific fighting. For example, infantry battalions conducted infantry training, and the RSTA squadron conducted reconnaissance and surveillance training. In August, 1-37 FA's tactical leaders spent three days at the Battle Simulation Center on Fort Lewis.

Using the joint conflict and tactical simulation (JCATS)[4] and the Kosovo common scenario, FA tactical leaders gained a better understanding of how to fight in an SSC that featured complex, urban terrain and distributed operations. During this simulation exercise (SIMEX), the FA battalion didn't perform new artillery tasks but had to operate in a significantly different environment than in the past.

The seventh day of the Tactical Leaders Course was reserved for retraining as well as after-action reviews (AARs).

Phase II of the Tactical Leaders Course will be a weeklong crucible event, "The

The adaptive leader is—

- Decisive.
- Able to balance the human leadership dimension with technology.
- Comfortable with uncertainty (agile and flexible).
- Focused and a quick learner.
- One who empowers others and is a decentralized leader who properly uses "initiative within intent."
- A good communicator.
- Able to build cohesive, trusting teams with candor.
- Effective using the force across the full spectrum of conflict.

Figure 2: Qualities of an Adaptive Leader

Arrowhead Challenge," that will occur in 2001. The Arrowhead Challenge will be a morale and cohesion building, performance-oriented event for leaders that will be physically and mentally demanding and focus on military skills. It also will serve as a ceremony to recognize the transition of leaders to this new organization.

Senior Leaders Course. The purpose of the Senior Leaders Course was to teach the senior IBCT leaders about the uniqueness of their organization. Participants were the brigade commander and his battalion commanders and their respective staffs. The course started at Fort Lewis on 15 June and finished with a one-week digital capstone exercise at Fort Leavenworth, Kansas, on 29 August.

In between these two events, the senior leaders spent one week each at Fort Lee, Virginia, training on BSB operations; Fort Huachuca, Arizona, on military intelligence; Fort Knox, Kentucky, on RSTA operations; and Fort Benning, Georgia, on infantry operations. At each post, the leaders participated in hands-on proponent training that was task, conditions and standards-based. In addition, special physical training events, staff rides and noteworthy guest speakers allowed the leaders to build camaraderie among themselves.

Training at Forts Lewis, Benning, Knox and Leavenworth had fires and effects and combat service support (CSS) concepts integrated into the instruction and exercises. For example, during the RSTA training at Fort Knox, the senior leaders grappled with how to support this unique unit with fires and effects and CSS.

Leader Sustainment Training. The quarterly sustainment training will begin in the spring of 2001. The two key components of the program are NCO educational development and nested leadership training. Each quarter, the five-day sustainment training will cover individual and special skills sustainment and low-density military occupational specialty (MOS) training, with selected NCOs attending college courses. At the same time, team leaders through the brigade commander will participate in nested leadership training.

NCO Education. This program will provide civilian education to staff sergeants (primarily) to enhance their educational development. Fort Lewis is working with colleges and universities in the northwest to provide two three-credit-hour college courses. One course will cover the human dimensions of leadership in combat, focusing on the practical application of the principles and concepts of the behavioral sciences and interpersonal relationships in a combat environment.

The second college course will cover the SSC environment, introducing various perspectives on global issues and emphasizing the increasingly interdependent nature of our world. Case studies will examine US interventions in Panama, Somalia, Haiti, Bosnia and Kosovo. During quarterly sustainment training, selected NCOs will be excused from other activities to attend these courses.

Day 1	Brigade Commander	Battalion Commanders	Company Commanders
Day 2	Battalion Commander	Company Commanders	Platoon Leaders
Day 3	Company Commander	Platoon Leaders	Squad Leaders
Day 4	Platoon Leader	Squad Leaders	Team Leaders
Day 5	As Required by Commanders		

Figure 3: Nested Leadership Training. Each day has problem-solving vignettes that focus at the highest level listed; the highest level is the title of the "nest." For example, each company commander will have participated in the Brigade Nest on Day 1 and the Battalion Nest on Day 2 before leading his own nest on Day 3.

1. Interpersonal—*How to Deal with People:*
- Understanding Soldiers
- Communicating
- Supervising
- Coaching
- Teaching
- Counseling
- Motivating
- Empowering

2. Conceptual—*How to Handle Ideas:*
- Using Sound Judgement
- Establishing Intent
- Filtering Information
- Understanding Systems
- Using Ethical, Analytical, Critical Reasoning

3. Technical—*How to Employ Job-Related Abilities:*
- Knowing Basic Soldier Skills
- Maintaining Critical Skills
- Resourcing
- Predicting Second and Third Order Events

4. Tactical—*How to Solve Unit Combat Problems:*
- Synchronizing
- Orchestrating

Figure 4: Skill Categories and Leader Actions for Nested Leadership Training Vignettes. These four skills from *FM 22-100 Army Leadership* form the basis for the skills developed in the leadership vignettes.

Nested Leadership Sustainment Training. The heart of the leadership sustainment program is quarterly nested leadership training. The purpose of this training is to develop the leaders' common understanding of IBCT operations that increases their experience levels and forces them to solve problems based on multiple leadership vignettes.

Figure 3 depicts the nested leadership model. Each of the five days trains a "nest" of leaders from three levels. For example, Day 1 is the "brigade nest" consisting of the brigade commander and his battalion and company commanders who tackle brigade-level problems posed in four vignettes. Note, for example, that each company commander will participate in training in two other levels of nests (brigade and battalion) before he leads his own nest of platoon and squad leaders through their four vignettes.

The fifth day of the nested leadership training is reserved for additional training, as required by the commanders. Leaders will need no external assistance to conduct their nested leadership training.

One-hundred and sixty vignettes are being developed for this program. The vignettes will focus on the four leadership skills taken from the leadership framework in FM 22-100: interpersonal, conceptual, technical and tactical (see Figure 4). For each day of training, two of the four vignettes will be based on tactical skills related to the IBCT O&O and use the Kosovo common scenario. The other two vignettes will focus on any of the three remaining leadership skills with any type of scenario. Seminars and discussions, map exercises,

videos and terrain exercises without troops (TEWT) are drivers for the vignettes.

The nested training approach allows the IBCT to develop adaptive thinking teams. As each nest works through four vignettes per day, leaders expand their experience base as they tackle problems focused at the highest level of that nest. Furthermore, leaders become proficient in making decisions and taking the initiative within the commander's intent and gain a common understanding of fighting and leading.

The objective of nested training is to create a common approach to analyzing and solving tactical problems that leads to a variety of acceptable correct "solutions" consistent with Army doctrine. The training avoids a validation of rigid thinking that leads to the same solution each time.[6]

Initiative Within Intent. Developing leaders who are comfortable taking the initiative within the commander's intent is an important component of the Leader Development Program.

A simple example illustrates the type of leader the IBCT needs. One of the IBCT infantry battalions has the mission to destroy an enemy force on a hilltop located about one to two kilometers behind a river. A company commander is given the mission of securing a bridge on the river to allow the rest of the battalion to cross the river and attack and destroy the enemy. Upon arriving near the bridge, the company commander sees an enemy platoon guarding it.

He has two options. One, he can attack the enemy force at the bridge, thus alerting the main force on the hill of his company's presence but accomplishing his mission of securing the bridge for the rest of the battalion. Two, upon seeing the enemy force at the bridge and understanding his higher commander's intent, he can send soldiers to recon both flanks of the bridge to find another fording location; the soldiers would discover a fording location east of the bridge. The company commander then could secure the fording location and notify the battalion of the new crossing site, which would allow the battalion to surprise the enemy force on the hill and destroy it. Clearly, the second option illustrates an IBCT leader who is empowered, can act within his commander's intent and is comfortable in making this type of decision.

The IBCT's nested leadership training will develop this common understanding of how to take the initiative within intent as the leaders solve various problems in the vignettes.

Related IBCT Training that Supports Leader Development. Two other IBCT activities will support the development of adaptive, decisive leaders: Situational Training Exercises (STXs) and a unique Company Commanders Preparation Program.

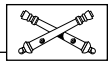
Situational Training Exercises. The platoon and squad STXs began last spring. The company STXs will start this fall. The STXs have realistic lanes that train warfighting and leadership skills.

Senior leaders are subject matter experts (SMEs) and serve as observer/controllers (O/Cs) during the conduct of the lanes. The leader O/Cs walk the lanes and help their subordinates understand their intent. "Fall out one" drills, where a key leader is "killed," occurs regularly and the mission continues. Uncertainty and ambiguity are built into the lanes, and multiple iterations occur during each STX. AARs focus on leader and unit actions.

Company Commanders Preparation Program. Starting in 2001, this program will focus on how to support precision internetted combined arms fighting and how to run the IBCT company/troop/battery. The course will consist of independent modules that include unit-specific training, leadership development, training management, staff training, maintenance and administration. Captains will train via a variety of means: self-paced, distance learning, home station and institutional training, the latter including temporary duty (TDY) trips to proponent schools and mobile training teams coming to Fort Lewis.

Conclusion. The 21st century operational environment and the IBCT O&O place exceptional demands on the leaders of this new organization. The IBCT is conducting realistic warfighting training to prepare for its brigade certification exercise at the Joint Readiness Training Center (JRTC) at Fort Polk, Louisiana, and initial operating capability (IOC) in December 2001.

The IBCT's Leadership Development Program will ensure the brigade's leaders are adaptive and decisive enough to maximize the combat power of their unique organization



Lieutenant Colonel William M. Raymond, Jr., took command of 2d Battalion, 2d Field Artillery (2-2 FA), 30th Field Artillery Regiment in the Training Command at Fort Sill, Oklahoma, in July. For six months before assuming command, he was the Effects Branch Chief in the Brigade Coordination Cell at Fort Lewis, Washington, helping to transform the 1st Battalion, 37th Field Artillery into an Initial Brigade Combat Team (IBCT) organization and develop the Fires and Effects Coordination Cell (FECC) and the IBCT's Leadership Development Training Program for the Training and Doctrine Command's (TRADOC's) Deputy Commanding General for Transformation. His other assignments include serving as the Deputy Chief for Experimentation, Task Force 2000 at the Field Artillery School, Fort Sill; S3 and Executive Officer for 2-2 FA; and Commander of Headquarters and Headquarters Battery for 6th Battalion, 1st Field Artillery in the 1st Armored Division Artillery in Germany. He holds a Ph.D. in Politics from the University of Michigan.

Endnotes:

1. The 3d Brigade, 2d Infantry Division, was the first brigade in the Army to transform into one of the Initial Brigade Combat Teams (IBCTs) and is projected to receive its interim armored vehicles (IAVs) in March 2001. It will undergo a Combat Training Center rotation in late 2001 before achieving its initial operating capability (IOC) in December 2001.
2. *Initial Brigade Combat Team (IBCT) Operational and Organizational (O&O),* 31 October 1999, Appendix I, 5.
3. The qualities listed here were derived from three sources. The first source was the IBCT O&O; Colonel Ricky Lynch's unpublished report on "Lessons Learned Commanding a Digital Brigade." Colonel Lynch is a former brigade commander in the 4th Infantry Division (Mechanized) at Fort Hood, Texas, the Army's first fully digitized division. The third source was the White Paper "Preparation of Leaders" by Frederic Brown, January 2000, of the Institute for Defense Analyses, Alexandria, Virginia.
4. Joint conflict and tactical simulation (JCATS) is a high-resolution combat simulation similar to Janus. It replicates combat forces down to the individual vehicles and personnel. It also can show aggregate forces in icons for better management in larger exercise scenarios. JCATS plays the terrain in three dimensions (although it still only appears two dimensionally on the computer screen), and it accounts for differences in elevation and vegetation to influence the battle by limiting weapons and visibility to line-of-sight. JCATS has a detailed urban modeling capability, to include subterranean features with the option of replicating buildings in complete detail. Artillery flight paths can be interdicted by high terrain (in rough approximation) and by buildings at the terminal end of the flight path. Buildings can be turned into rubble, which allows moderately good training on collateral damage and rules of engagement (ROE) issues.
5. *FM 22-100 Army Leadership* (Fort Leavenworth, Kansas: US Army Combined Arms Center, 31 August 1999), 2-25.
6. See Lieutenant Colonel James M. Dubik's article "Decentralized Command: Translating Theory Into Practice," *Military Review,* June 1992, for a more detailed discussion of the conditions for decentralized command.

Training Adaptive Leaders
Are We Ready?

by Dr. Karol G. Ross

The history of the 20th century is filled with examples of the American soldiers' bravery and innovation-ordinary soldiers rising to extraordinary stature through uncommon valor and the ability to adapt to the unexpected. The adaptability of the American soldier is nothing new, but new challenges in the 21st century cause us to ask ourselves, "Are we ready?"

Army Experiment 6 CGSC Students in the WarLab

The demands to adapt to changing operations and technology are growing at an almost incomprehensible rate. Traditional warfighting proficiency must be combined with additional skills if our Army is to remain the world's premier fighting force. We need men and women who can think at the speed of new technology. Even with talent, it takes years to develop expert tactical thinking. Innovative training is needed to help people develop their thinking skills earlier and more thoroughly.

A new training methodology for developing adaptive thinking is helping emerging leaders get ready. This article addresses key questions about the new methodology.

Why Adaptive Thinking? Increased cognitive demands for situation assessment, decision-making and monitoring outcomes in unusual situations are projected for "information rich," complex, fast-paced and ambiguous mission settings of the 21st century. Individuals are expected to be more multi-functional, i.e., to understand and support the roles of other staff members and, in some cases, perform tasks previously designated for only one specially trained staff member.

Teams are expected to continuously maintain a collective, almost tacit awareness and understanding of the "big picture," including many elements not previously tracked by a battalion or brigade staff. Advances in information technology, changing operational missions and redesigned, "flattened" organizations all contribute to the new performance requirements. The Army leadership has defined the general skill underlying the performance requirements as adaptive thinking. (See Figure 1 on Page 16.)

The genesis of the training methodology was at the Army Research Laboratory-Human Research and Engineering Directorate Field Unit at the Depth and Simultaneous Attack Battle Lab, Fort Sill, Oklahoma, and at Fort Leavenworth, Kansas. The methodology was successfully demonstrated in 1999 at the Command and General Staff College (CGSC) in the Training and Doctrine Command's (TRADOC's) Army Experiment 6. (For more information on AE6, see www.armyexperiment.net.) TRADOC's methodology continues to develop and expand as part of the Initial Brigade Combat Team's (IBCT's) training and other training development efforts.

Adaptive thinking is—

- Key to the art rather than the science of war.
- The ability to react to unexpected changes during operations.
- Knowing "how" to think in addition to "what" to think.
- The ability to attain a multi-dimensional conceptualization of battlefield events and use this understanding to decide and act.

Figure 1: Characterization of Adaptive Thinking by General John N. Abrams, Commanding General of the Training and Doctrine Command (TRADOC), Fort Monroe, Virginia

The work was carried out at the Field Artillery School at Fort Sill in 1998 to answer the question "What kind of technology is most suitable for advanced officer training in the military schoolhouse setting?" We concluded that merely importing advanced battlefield simulation technology into the classroom setting wouldn't support the key requirement of advanced learning or the level of training transfer needed for emerging missions.

Written visions of emerging military operations indicated that the training required more focus on flexible performance of tactical thinking in response to circumstances not anticipated by the learner. The goal of the project became to further the systematic and early development of flexibility during an officer's career. To meet that goal, we designed the Advanced Learning Model at Fort Sill.

Advanced Learning Model. The model is based on state-of-the-art academic research in high-level cognitive learning. It supports development of high-level thinking skills in an area of expertise where there can be a lot of ambiguity in the decision-making process—an accurate description of command and battle staff performance.

The model uses an academic instructional approach called *constructivism.* The goal of constructivism is for students to practice constructing their individual models of complex problem situations while immersed in realistic, challenging situations. The instructional process helps the learner identify and frame (structure) a problem and then experience how information can function as a tool to solve that problem.

Instruction must include multiple, complex, problem-solving iterations. Use of a rich context allows the student to see situations from many perspectives and struggle with making sense of situations by defining problems and arriving at workable solutions. The approach is student-centered and places the instructor in a facilitation role.

The advanced learner—the target audience for this learning model—already has a great deal of information and at least some practical procedural skills. The advanced learner is neither a novice nor an expert.

Advanced learning requires a period of sustained exploration (guided experience) to move through this stage and on to expertise. There is no shortcut to expert performance. However, to make the most of the advanced training time available, more structured experiences and less direct instruction can move the learner along more effectively.

Those involved in leader and battle staff training today may ask, "Aren't we already training that way?" The answer is "Yes" and "No." We have authentic learning situations—Combat Training Centers (CTCs), the Battle Command Training Program (BCTP) and simulations in the classroom—but these are usually "high cost" training situations that aren't structured to accommodate failures and exploration through multiple iterations needed at the advanced level of learning. In advanced institutional training or unit staff training, we have small group instruction and students or staff working together, but we're not coaching problem solving of the nature needed to reinforce how to think adaptively in the operational setting.

We employ cases and examples in institutional learning, but we still rely too much on abstracted, disjointed cases with no method to support active problem solving and exploration. Students must confront realistic tasks, not just be passively exposed to examples. While we expose trainees to expertise in terms of recent operational lessons learned, the exposure to expert models is sterile or incomplete. It lacks direct linkages to experts practicing in the field to exchange views and understand the decision processes that unfolded.

The objective of the adaptive thinking training methodology is different than traditional battle staff training. It's process and execution oriented. It allows the students to fight a plan and concentrate and reflect on their thinking process as they execute the plan.

Next, the role of the coach or mentor to guide the learning process is key. Coaching must be implemented in addition to the traditional after-action review (AAR) process.

Also, the nature of the practice in the iterations is different. Students are placed in increasingly more demanding situations, growing out of one general scenario with the insertion of probes or unexpected events until fundamentals and thinking skills become second nature.

Training must include multiple perspectives on the same situation and articulation of principles across perspectives and experiences to help learners weave together what they are experiencing into an expert's mindset.

In this learning process, people create a mental space where they feel comfortable with a problem or concept—an equilibrium point—and as they add new perceptions, dis-equilibrium is created. The struggle to get to a new point of equilibrium or balance is the process of the advanced learner making sense of new perceptions during the problem-solving process.

Periods of dis-equilibrium are uncomfortable but should be welcomed as a sign of progress, or at least, one should be able to disregard the uncomfortable feelings and proceed. They are part of the "terrain" leading to new discoveries and the creation of better vantage points for defining and solving problems. It is only through sustained experience solving meaningful problems and experiencing results (success and failure) that an advanced learner can begin to tolerate ambiguity and gain the perspective that is part of expert performance.

Captains and majors in the Army typically have a wealth of knowledge, but they can't always apply it well, especially under pressure. The Advanced Learning Model is directive in the use of multiple, challenging problem-solving iterations with a specific kind of coaching to help bring more of our knowledge into play at the right time.

One of the greatest challenges for instructors or leaders using this model is to change their role from a provider of information to coach and, often, fellow learner. Instructors are encouraged not to introduce concepts through direct

teaching but to use *scaffolding* at critical times during problem solving to help the learners move forward.

The distinction between scaffolding—a coaching technique—and more traditional after-action feedback is critical to the Advanced Learning Model. Good feedback helps the students generalize the process they used to solve the problem while the mentor guides the feedback and offers or even demonstrates other possible solutions.

AAR feedback is instructor-led and may be a formal briefing of a plan by the students. The traditional AAR comes after executing a plan or as a more informal review during the learning process.

In contrast, during scaffolding, the instructor or leader observes the learners as they perform the task(s) and intervenes only when the students reach a point of no progress. This intervention can take the form of questions, demonstrations, discussion or instructions. The instructor only intervenes to the point where the students can begin making progress again.

The process starts with the introduction of a situation or a challenge to the students. The students define what they believe the problem to be (like mission analysis). They then form a hypothesis about how to address the problem. This part of the learning process is particularly important. Here, the instructor begins to see what the students "cue into" in the situation and what they overlook. This is the first chance to see what kind of good and poor assumptions the students make. Next, the students build support for their approach and move into testing their solutions, and the instructor continues to watch for mistaken assumptions, oversights or even gaps in basic knowledge or techniques.

Continual assessment is the responsibility of both the learner and the instructor. It permeates the entire process.

Current technology is supportive of full-scale staff and unit exercises, but not of multiple iterations and careful scaffolding. Likewise, emerging technology supports typical computer-based training that is easy to deliver and could accommodate computer-delivered tutoring but generally doesn't support active problem solving by one or more learners.

To fill the technology gap, we began developing a PC-based simulation environment for use by individuals or by "multi-players." The battle staff training tool, called Advanced Cognitive Understanding of Military Environments (ACUMEN), for battalion and brigade staff officers is still under development at Fort Sill's Battle Lab. The goal is to make the training tool a useful practice environment with little or no live instructor involvement, when desired. The training tool requires constant participation by the user and provides coaching in a natural format, such as questions from simulated co-workers.

As we came to conclusions about the nature of the training needed and began developing the simulated learning environment, we became aware that the Army leadership had begun to discuss a similar viewpoint, called "adaptive thinking." The 1999 Army Experiment 6 demonstration of our Advanced Learning Model—"The Adaptive Thinking Experiment"—at CSGS in a small group instruction context was the result. This experiment gave us more insight into the potential success of the model in an instructional environment before we complete the PC-based tool.

The Adaptive Thinking Training Methodology. The purpose of the adaptive thinking experiment was to develop and test a methodology to teach the leader and battle staff how to anticipate and leverage change. While the learning model contained the ingredients to meet that goal, a learning environment was needed to support it.

The learning model was designed to maximize the use of technology to accelerate the development of expertise. The CGSC WarLab, containing an immersive classroom, a virtual tactical operations center (TOC) and simulation support, provided a low-overhead training context to test the learning model.

The WarLab has been described as a "staff COFT" (conduct-of-fire-trainer) type of environment. Unlike any other current technology, the WarLab was constructed to host leader and staff reaction courses using a low-overhead driver consisting of Eagle/ModSAF simulations with the ability to tie in Army battle command system (ABCS) tactical systems. Without the necessity of a full brigade exercise and with only a handful of overhead staff, the leader and battle staff can execute the kind of realistic challenges needed to support the learning model.

The concept of *deliberate practice* under research at the Army Research Institute (ARI) was integrated with our model to produce the adaptive thinking training methodology. Deliberate practice is a mode of training common in sports. It involves performing while focusing on selected elements of form. The elements are compared against an expert standard and consciously controlled so they conform to the standard. The behavior is repeated until it is performed automatically with improved form.

Typically, there is a focus on weaknesses as opposed to strengths. The final performance of the response in a correct form is vital because it is only

To fill the technology gap, we began developing a PC-based simulation environment that supports multiple iterations of student problem solving and scaffolding.

The expert tactical thinker—

- Models a *thinking* enemy.
- Focuses on *mission accomplishment* and the higher *commander's intent*.
- Exhibits visualizations that are *dynamic, proactive* and *flexible.*
- Shows rich *contingency* thinking.
- Considers where the fight fits into *the bigger picture* of what is happening or should happen, both from friendly and enemy perspectives.
- Considers *all elements/systems* available to him and his enemy and their interactions.
- Includes considerations of *timing.*

Figure 2: Themes Characteristic of Expert Tactical Thinking

through performance that the behavior becomes automatic and can be performed without conscious effort. The student's making a mistake and, later, realizing he made a mistake, for example, during an AAR discussion, doesn't go far enough. Deliberate practice requires a repetition where the correct behavior is performed.

As we refined the adaptive thinking training methodology, we also integrated a set of principles called *themes* identified as characteristics of expert tactical thinking, which was drawn from previous ARI research. (See Figure 2.) The Advanced Learning Model advocates the use of themes to support the development of a web-like understanding of commonalties across experiences. Deliberate practice similarly advocates the use of principles to focus practice sessions on specific habits of thought.

The behaviors listed in Figure 2 are familiar to most soldiers who have studied the art of battle command. Despite the familiarity of the ideas, the behaviors are commonly performed poorly or not at all in realistic situations, especially in times of stress, fatigue and distracting demands. The commander encounters a minefield and doesn't consider the enemy's purpose in emplacing the minefield (i.e., Where does the enemy want me to go?) He changes his axis of advance and doesn't consider how this will affect adjacent friendly units. He reacts to an unexpected enemy threat and doesn't assess the affect of his actions on accomplishing the mission. He forecasts the actions of the enemy regiment he's facing without considering what role that regiment plays in the concept of the enemy division commander. He visualizes the movements of one of his companies through the attack without assessing the progressive effects of combat on the company's capabilities.

It's not enough to understand the concepts; the learner must perform with enough repetition that his behaviors become habitual. Thinking, itself, never should become automatic and effortless, but the structure of how to think on the battlefield, once it has become habitual, supports clear and accurate thinking under conditions of pressure.

The adaptive thinking training methodology was designed to develop the skills listed in Figure 3. The methodology was demonstrated with 11 majors from the Advanced Tactics Elective Course A308 at CGSC in 1999 who comprised the experimental group. The students participated in exercises with a team of highly experienced military experts acting as mentors.

The first part of the instruction concentrated on creating a multidimensional understanding of the battlefield using a more traditional instructional approach. The second portion was in the form of a capstone exercise. It centered on intense deliberate practice of cognitive skills in an environment designed in accordance with the training model.

Student insight into battlefield situations was supported in both parts of the instruction by the consistent use of the themes that represent expert perception of battlefield situations and by simulations to enact and display developing situations under discussion. Their performance was compared with that of similar students in a control group who didn't receive the special training but who completed the existing brigade advanced tactics elective course and participated in a traditionally structured capstone exercise. The team of mentors was engaged in both the first and second parts of the adaptive training experiment for the experimental group only.

Performance measurement, consisting of a structured method for eliciting written situation assessments from individuals about a specific battlefield situation, was conducted before and after the first part and before and after the second part of the course. The situation assessments presented the same general situation on paper to each individual student. Each student made a brief, written assessment by answering a set of questions about the situation.

Then a special situation was introduced on paper in which some unexpected event occurred within the original situation. The students each gave their revised written assessment of the situation by responding to a set of questions about the information they would need and actions they would take then. The assessment was scored by a team of subject matter experts (SMEs) using a 10-point scale.

Students who completed the adaptive thinking experiment were found to per-

Adaptive thinking skills are—

- Domain-specific rather than general critical thinking skills.
- Based on effective learning experiences.
- Based on a concept of automaticity that includes not just procedural tasks, but also cognitive tasks, ensuring performance under stress and freeing the mind to work at higher cognitive levels.
- Based on perceptual attunement (tuning in to the cues an expert would see in a situation), which facilitates the cognitive management of complex and rich information.
- Based on the ability to assess a situation in more depth through access to multiple perspectives.
- Tolerant of the dis-equilibrium associated with the assessment of complex issues.
- Based on the ability to collaborate with others and "feed" off each other's ideas until reaching a workable solution.

Figure 3: Adaptive Thinking Skills

form significantly better at adaptive tactical thinking. Better performance was found after the second half of the course only—the intense practice portion. The first half of the adaptive thinking experiment course, more traditional in nature, didn't produce measurable gains in adaptive thinking.

Where Do We Go From Here? Any new product—a training method, an information system or a weapon system—must continue to be developed and tested after initial promise is shown. In 2000, the methodology was applied in a newly developed Medium Brigade Course at CGSC under the auspices of the TRADOC Army transformation program. The methodology also was used in the Senior Leaders Course provided to the Initial Brigade Combat Team at the WarLab at CGSC in August. The coaching techniques are being refined and documented as an Army transformation product, "Leader's Guide to the Adaptive Thinking Training Methodology," which will be disseminated as a training circular at the Association of United States Army convention in October.

Still, the technology gap exists. The Army has no "staff COFT" for brigade staff training. We're continuing to develop the PC-based simulation software to support low-cost adaptive tactical thinking training. However, the Army still lacks a low-overhead simulation solution that's easy to access and operate and integrates with ABCS tactical equipment or can be embedded in ABCS for training. Such a simulation solution would allow us to fully implement the learning model for the digitized force.

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First Lieutenant to Korea

The rumors moved quickly through the battalion. The Army had started a program—First Lieutenant (1LT) to Korea—and the battalion was sending three lieutenants.

"Pick me, pick me," were not the first words I uttered. In fact, I could not even visualize going to Korea until my battalion fire direction officer (FDO) explained how the program would be a leadership challenge and improve my professional development. Now that I'm finishing my tour in Korea, I must agree. My year in Korea has been one of education and challenges.

Lieutenant Missions. Korea is the only theater that uses battle books. These books are dynamic as they're constantly changing. Lieutenants maintain the books; however, it's the 1LT operations officer's responsibility to ensure they meet all standards. It has been stressful working with the battle books because the format of the book—transition to war (TTW), unit basic load (UBL) and initial battle position (IBP)—has changed.

Redeveloping the book involved many recons and countless late nights and weekends. It required 1LT operations officers to educate themselves on the proper way to develop, analyze and brief the modified combined obstacle overlay (MCOO) and give proper guidance to other lieutenants in the battery. It's one thing to develop and brief a plan for training, but it takes on an entirely new meaning when that's the plan you and your men will go to war with.

Maintenance in 6th Battalion, 37th Field Artillery (6-37 FA) is a unique challenge. The battalion commander's weekly maintenance program is intense. It goes far beyond the usual identifying of faults; it also involves true preventive maintenance. Soldiers spend many hours finding potential nonmission capable (NMC) faults. A back order status of a part in Korea could mean a delay of weeks; however, the unit may be only seconds from "the balloon going up." Lieutenants quickly learn to command their platoon's way of thinking about maintenance and be proactive.

Beyond the lieutenant's daily duties, he participates in corps- to division-level exercises that take him away from his platoon for weeks at a time. Many of the exercises involve US and Korean forces and require a wide scope of responsibilities. The lieutenants are officers-in-charge (OICs) of the battalion's augmentees to Ulchi Focus Lens (UFL). They also brief the North Korean artillery attack and target selection to the "general of North Korean People's Army" (nKPA) during UFL, as well as gather information and co-formulate the G3's briefing to the Republic of Korea's (ROK's) commander. More often than not, 1LTs in Korea find themselves with more responsibilities than their counterparts in other theaters.

Learning Commandership. The First Lieutenant to Korea Program prepares 1LTs for command. Every decision or troop-leading procedure in Korea can have a real-world impact and affect the readiness of the Army's most forward-deployed division.

Personnel changes are almost daily; therefore, a lieutenant must learn to maintain unit cohesion. Team building is a necessary skill. The hardest leadership challenge is operating within Korea's training restrictions and under the 2d Infantry Division's (ID's) high operational tempo (OPTEMPO). Despite these restrictions, 6-37 FA maintains mission readiness.

In the 2d ID, lieutenants develop initiative and creativity and sharpen their leadership skills. The division's standard is to be prepared to decisively engage the enemy at a moment's notice. That's not something we boast about—it's how we live in 6-37 FA. *On the Minute—Deep Strike*.

1LT Derrick G. Anthony, FA
Former Operations Officer, A/6-37 FA
2d IN Div Arty, Korea

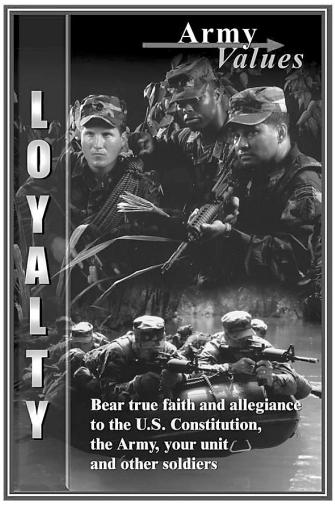
The Practical Application of Army Values

by Captain Patrick D. Quinn III

Recent times have seen a surge in the number of incidents of Army leaders failing to live up to the ideals of our Army values. The actions of these few soldiers have cast shadows of discredit on the members of the Army who strive to live in accordance with the seven Army values—loyalty, duty, respect, selfless service, honor, integrity and personal courage.

In response to many of these incidents, senior leaders produced and distributed "values cards" and "values dog tags." In light of these recent failures, there is little wonder these cards were met with resistance. Upon receiving the "values dog tags" and being informed that their wear was mandatory, many soldiers could be heard making comments to the effect of, "I don't need to be told how to live my life."

Since the issuance of the values dog tags and values cards, commanders and senior NCOs at all levels have instituted a series of mandatory training events for each Army value. These periods of instruction are little more than Power Point slide shows or, at best, some small group discussions on the meaning of each of the Army values. The unit's values-based training is generally limited to quarterly requirements. These classes are not much more than a "check in the block" as a unit is preparing for its quarterly training brief.



Current classes on Army values focus on understanding the definition of each value and its fixed application in conveniently cut-and-dry scenarios. The situations fail to adequately train and prepare junior leaders to internalize the Army's values system. As a result, junior leaders are ill prepared to implement values-based decisions in the difficult real-world situations of today's Army.

Not only have we failed to adequately prepare junior leaders for real-world challenges, we have unintentionally created a zero-defects atmosphere surrounding Army values. The use of clear-cut scenarios, coupled with measuring adherence to the seven Army values as a part of the officer evaluation report (OER) and NCO evaluation report (NCOER) systems, is damaging the future of our organization. This atmosphere strips away the ability of the junior members of our organization to reflect, learn and grow from the decisions they make—right or wrong. We've created an essence of cover-up and denial by "ruining careers" if someone gets a "no" on the front-side of his evaluation report.

This article discusses some real-world situations, how junior leaders might react to the ethical dilemma before them and the impact of the Army's unofficial zero-defects mentality.

In the desert of Kuwait, as a part of an Operation Intrinsic Action rotation, an FA battery is attached to a maneuver task force (TF). You, the reader, are the all-knowing battery commander. Lieutenants and senior NCOs of the battery encounter a series of moral and ethical dilemmas throughout the deployment and approach you for mentoring and guidance. Subsequent to the event, you reflect on the moral dilemma, which illustrates some of the challenges.

Scenario 1: Loyalty and Friendship. Platoon leader First Lieutenant (1LT) Brox is conducting his final planning and coordination for a platoon-level training exercise to be conducted along the southern boundary of the Udairi Impact Area. This is a very important event for him as it is his final opportunity to train before executing Paladin Table 12—his platoon's external evaluation (EXEVAL). He has a number of training objectives he wants to accomplish during this field training exercise (FTX).

The US Army Central Command-Kuwait (ARCENT-K) range control standing operating procedure (SOP) requires the officer-in-charge (OIC) conduct a down-range sweep of the impact area to ensure it's clear of any Bedouins, nomads, camel-herders, etc. The TF SOP states "all down-range sweeps by the OIC will be accompanied by members of the task force scout platoon." 1LT Brox links up with the scout platoon leader, 1LT Rash, who happens to be his good friend.

As the two vehicles crest the hill at Observation Post 8, they stop to observe the impact area and plan a route to conduct a thorough sweep of the area. In the distance, 1LT Brox can identify a herd of camels that clearly will interfere with his training. 1LT Brox knows the correct procedure to clear the impact area is to notify the TF tactical operations center (TOC), which then coordinates support with Kuwaiti military police (MP) to escort the Bedouins out of the impact area.

He voices his frustration to 1LT Rash about the inefficiencies of this process that historically takes two days to complete and how this will have a dramatic effect on his ability to prepare for the EXEVAL. 1LT Rash comments that

1LT Brox should follow him and watch and learn how scouts "take care of business."

As the two vehicles approach the herd of camels and the Bedouins, 1LT Rash's vehicle suddenly accelerates into the herd and clearly attempts to run over a number of the camels. In a panic, the herd begins to rapidly move away from 1LT Rash's vehicle. 1LT Rash pursues them, pushing the herd with his vehicle while standing through the cupola of his high-mobility multipurpose wheeled vehicle (HMMWV) behind his M2 .50 cal machine gun, yelling and screaming at the Bedouins. Once the herd had sufficiently cleared the training area, 1LT Rash returns and comments, "The training area is all clear now. You just have to know how to treat these people."

Several days later, after returning from staff call, you bring your lieutenants and senior NCOs together. Apparently, the ARCENT-K Chief of Staff heard about the incident through the liaison officer (LNO) to the Kuwaiti MP unit. Since your TF is the only unit presently in country, the Chief of Staff relayed the incident to your TF commander and wants him to follow up on the situation.

After the meeting, 1LT Brox approaches you and recounts the details of what happened along with the fact that he has been struggling with the situation and was unsure about coming forward with the information. He remembers discussions with you concerning the Army values and, in particular, is torn between feelings of loyalty to his peer and the blatant disrespect for citizens of this country. He believes he did the right thing by choosing to support his friend and fellow soldier over someone with whom he shares nothing in common. He justifies this decision by stating that the greater good in this case is demonstrating loyalty to his peers.

As you are talking with him, you ask him to differentiate between loyalty and friendship, feeling that he may be confusing the two. 1LT Brox defines loyalty as support for an ideal, organization or individuals in the performance of a duty based on a promise made or an oath taken. Friendship is a feeling of dedication to an individual based on past, shared experiences.

You ask, "Which, then, is more important for you to support—the values of the organization of which you are a member or an individual with whom you associate on a personal basis?"

1LT Brox agrees organizational values represent the greater good; however he's still concerned that reporting his friend will get 1LT Rash into trouble. He asks if it would be appropriate to confront his friend one-on-one and attempt to dissuade him from further instances of this behavior. Since no laws were broken and no individuals or property damaged, you advise him that a face-to-face confrontation is a good starting point. The scout platoon leader's reaction to this confrontation will help your platoon leader determine his subsequent actions.

Later that night, you sit down and reflect on the day's events. One of the most difficult decisions an individual has to make is to whom he owes his allegiance or loyalty. It's difficult to distinguish between loyalty and friendship. Moreover, it's especially challenging to confront or turn-in a close friend, particularly when the confrontation could lead to disciplinary action. The two ideals are very similar in nature.

You are disappointed with the fact that 1LT Brox tolerated an incident as disrespectful as this. Respect doesn't apply just to members of your own unit or family members you encounter on-post. It's a fundamental belief that all beings are intrinsically valuable, regardless of ethical, racial or religious backgrounds.

Why didn't 1LT Brox come forward on his own? Could he have done something at the time to prevent or stop the incident from occurring? He obviously felt there would be consequences if this incident were to "get out of the bag," and he was right.

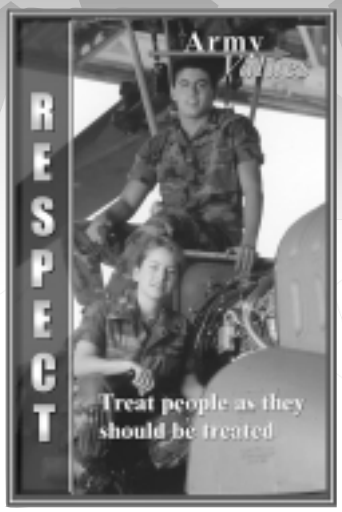
Scenario 2: Taking a Moral Stand. As anyone who has ever been a battery executive officer (XO) can attest, there is a great number of duties to fill the day. This deployment is no exception for your XO, 1LT Danrich. In addition to the standard duties normally assigned to an XO, 1LT Danrich serves as the battery's purchasing agent. A number of morale, welfare and recreation (MWR) items are purchased routinely from various local establishments. It's 1LT Danrich's responsibility to purchase, pick-up and deliver these supplies to the unit.

Private Murphy's Law by Mark Baker (Courtesy of Mark Baker, Army Times, *24 April 2000)*

Since the beginning of the deployment, 1LT Danrich has had a number of challenges in performing this duty. Time and time again he has failed to get the correct amount of supplies delivered at the appropriate times. As you are talking with some of your fellow commanders, you inquire as to their status in this area. Noting that none of them is experiencing any difficulties, you decide to have a talk with young 1LT Danrich.

Later that evening, you call 1LT Danrich in to discuss the situation with him. You bring your discussion with the other commanders to his attention. Then he tells you the rest of the story. 1LT Danrich states that he has, in fact, met with a lot of opposition and resis-

tance from members of the local community as well as store owners and civil and military authorities because he has refused to "grease their palms." Apparently, it is a common and accepted practice in this culture to tip various individuals you encounter to gain their favor and encourage them to expedite services. Failure to compensate these individuals adequately results in delays, confiscation of property, etc. This is an accepted practice in this culture, yet it is clearly not acceptable in our culture.

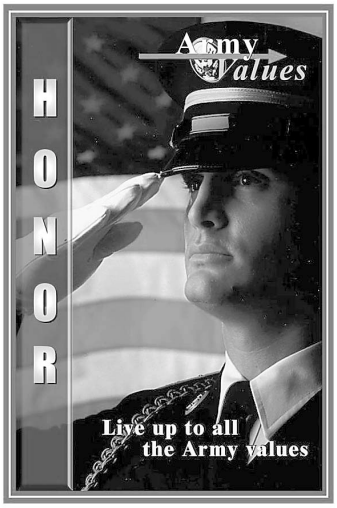


This new information brings to light a perspective of which you were not previously aware. When you ask why other companies weren't experiencing the same level of difficulty, 1LT Danrich asserts that everyone else is paying off the Kuwaiti officials.

"You can assume what you want to, Sir, but I've seen it happen. If you don't cough up some MREs [meals, ready to eat], a case of bottled water or at least a box of chem lights, then you'll encounter problems along the way."

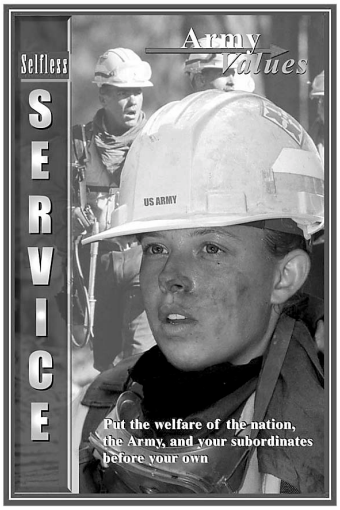
1LT Danrich is adamant about holding to his position. "All my values training thus far tells me there is no gray area. Once you start down that road and compromise your values, you never truly have them again."

Stuck between a rock and hard place, you tell him to remain true to his values and continue to do the best he can. Later that night you reflect on this latest situation. The dilemma seems easy to solve—do what's right, legally and morally. But what about the hardship this situation is causing the unit?



For almost two months, the unit has been doing without the proper amount of MWR supplies. The challenge lies in 1LT Danrich's attempt to do what is right and the effect it is beginning to have on the unit's ability to meet its mission and maintain a high level of morale. Where does one draw the line when what is moral in one culture is not in another? How much of an impact will 1LT Danrich's moral stand have on the morale of the soldiers when they realize that everyone else in the TF is getting their MWR supplies?

United States' companies that conduct business in a variety of different countries have learned that to be successful in other cultures they must adapt and conform to the expectations and demands of that society. For example, food products shipped to Japan often don't clear customs and rot at the port if port authorities are not compensated. American companies conducting business in Saudi Arabia have learned not to discuss business in the presence of Saudi females. Although we don't support these practices in our own culture, we must recognize that they are accepted in other cultures.



Is it illegal or immoral to give away some MREs or a few cases of water? Although the notion of choosing the greater good supports holding true to your own culture's moral beliefs, the hardship you are causing your own soldiers can't be reconciled. You decide to have 1LT Danrich give up some supplies to get the much-needed MWR supplies.

What impact does this decision have on you, and how will it affect your career, as well as that of 1LT Danrich? You have never faced a situation like this before. Your values training, as well as the command climate prevalent across every unit you've been assigned to, tells you there is no margin for error. If you make a decision, it'd better be the right one. That's easy to do when the issue is black-and-white, but what about the gray area?

Scenario 3: Combat Trains Command Post. One of the many duties your battery is tasked to perform is to serve on the TF guard force. Second platoon is pulling security at the combat trains command post (CP). This detail consists of a platoon of your personnel and equipment manning various guard posts, entry control points, the quick-reaction force, etc.

Sergeant First Class (SFC) Jenry, while on duty as the sergeant of the guard, is conducting an inspection of the troop billeting and bivouac area as required in his guard instructions. During this inspection, he catches Specialist (SPC) Alatts, one of his off-duty guard force soldiers, "socializing" with a female member of the combat trains CP. SFC Jenry, himself a single soldier, understands and empathizes with SPC Alatts' desires and need for a relationship. However, he is well aware that the TF commander has a policy explicitly forbidding intimate contact in a field or bivouac environment. This is primarily a force protection/health-of-the-force issue.

The two soldiers were not "in the act," but SFC Jenry knows that had he not come across them when he did, they most likely would have been. He asks himself, "What harm can it do?" His bottom-line mission is the security of the perimeter—the fact that he caught these soldiers who were off duty and not hindering the mission is inconsequential to the purpose behind his being there.

SPC Alatts is one of his best troops and is the stabilizer in his 4th Section. He doesn't want to get this soldier busted, and he definitely can't afford to shut down a section. So he orders his soldier to return to his bivouac area and doesn't log the event on his DA Form 1594 Daily Staff Journal or Duty Officer's Log.

The next evening before assuming his shift, SFC Jenry reports to you and states he wants to correct his duty log from the previous evening. When you ask the nature of the correction, he tells you he feels he made a poor decision and wishes to correct it. Since coming

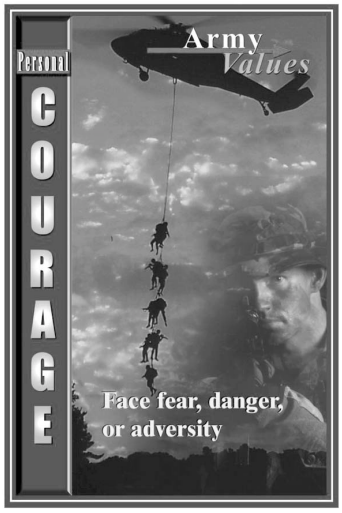
off duty, he has been trying to reconcile his actions from the previous evening. He realizes that his failure to completely and accurately report an incident created a situation where two wrongs had occurred. His failure to properly perform his duties could result in a breakdown in the trust his subordinates and superiors have in him.

Later, you reflect on the situation that transpired. SFC Jenry is an outstanding NCO. Where did his judgment fail him? It seems SFC Jenry tried to delineate between the performance of his duties as the sergeant of the guard and the purpose behind his soldiers being at the combat trains CP.

Duty is the most sublime of all the Army values. "Special trust and confidence" has been reposed in each of us—a trust to carry out the duties we're assigned. We must not limit the scope of our duties to that required by regulations or orders. Duty is encapsulated in the premise of consistently doing what is right.

Your immediate reaction is disappointment that SFC Jenry would have overlooked this incident. Of all the problems you have encountered thus far, this one seems the most cut and dry.

However, the more you think about it, the greater the respect and admiration you have for SFC Jenry and his ability to come forward and correct his wrongdoing. This action is the pinnacle of the term "duty."



In today's Army where ethical "stutter steps" are as good as a ceremonious end to a career, SFC Jenry's actions speak louder than words. Nobody would have known about this incident if he had not come forward. Who would you rather have working for you, SFC Jenry or an individual who makes a mistake and takes no action to correct it? SFC Jenry has duty deeply instilled in him and the intestinal fortitude to admit to making a mistake. Others simply may have the appearance of doing the right thing.

Reflections. How do we conduct effective values training for the wide diversity of ethical, religious and cultural backgrounds we have in the US Army? Is there one simple answer to every ethical and moral dilemma we might face? One may think that to focus on upholding the greater good would be sufficient.

What, then, of the situation with 1LT Brox and 1LT Rash as compared to that of 1LT Danrich? In the first scenario, the greater good is obviously loyalty to the organization as well as the recognition of the dignity and worth of all people. What is the greater good in the situation with 1LT Danrich? To remain steadfast to the ideal of unbreakable integrity would result in hardship on the unit. Which is the greater good and to whom does your loyalty flow in this situation?

The application of ethics and morality is as individual as you and I. There are certain universal truths that can be extracted from the seven Army values. In the end, when the chips are down and we are confronted with our own "real-world" moral dilemmas, we must base our actions and decisions on our own analysis, individual training and experiences. The correctness and "live-ability" of our decisions will be reflected as we look in the mirror the next morning.

As in any training exercise, a commander must strive to make the training as realistic as possible within the confines of risk management. For the purpose of "ease of training" we have created artificiality in our values training. This limits our ability to "train as we fight" in terms of Army values.

As with almost any argument, there are exceptions. There are real-world moral and ethical dilemmas that are cut and dry. But mixed in this reality lies confusion, ambiguity and conflict. The proof to this argument is on the front page of *Army Times* or any leading news publication. It seems that almost every issue has at least one article or commentary on a recent scandal, accusation, affair or moral incident in our organization. These incidents are systemic across all ranks—not just isolated to one corps or another.

As I reflect on the values training, I am struck by the obviousness of a zero-defects mentality we all seem to possess. Indeed, this mentality is reflected in our OERs and NCOERs. To receive anything less than the highest ratings in the area of values and beliefs would be an unceremonious end to an individual's career.

The emphasis on zero defects has created an atmosphere in which soldiers feel pressure to cover-up falters and misgivings. What if, at some point in the past, the leaders we've read about in *Army Times* had been allowed to make mistakes, admit them, learn from them and grow as individuals and leaders without the fear of ending their careers for making one wrong decision? Would they have "made the *Army Times*"?

Instead of learning how to deny, avoid and cover up a misjudgment because of a perceived zero-defects atmosphere, our soldiers should be gaining the opportunity to learn from their mistakes and take the experience forward. If that were to happen, the situation the Army is facing would change greatly.

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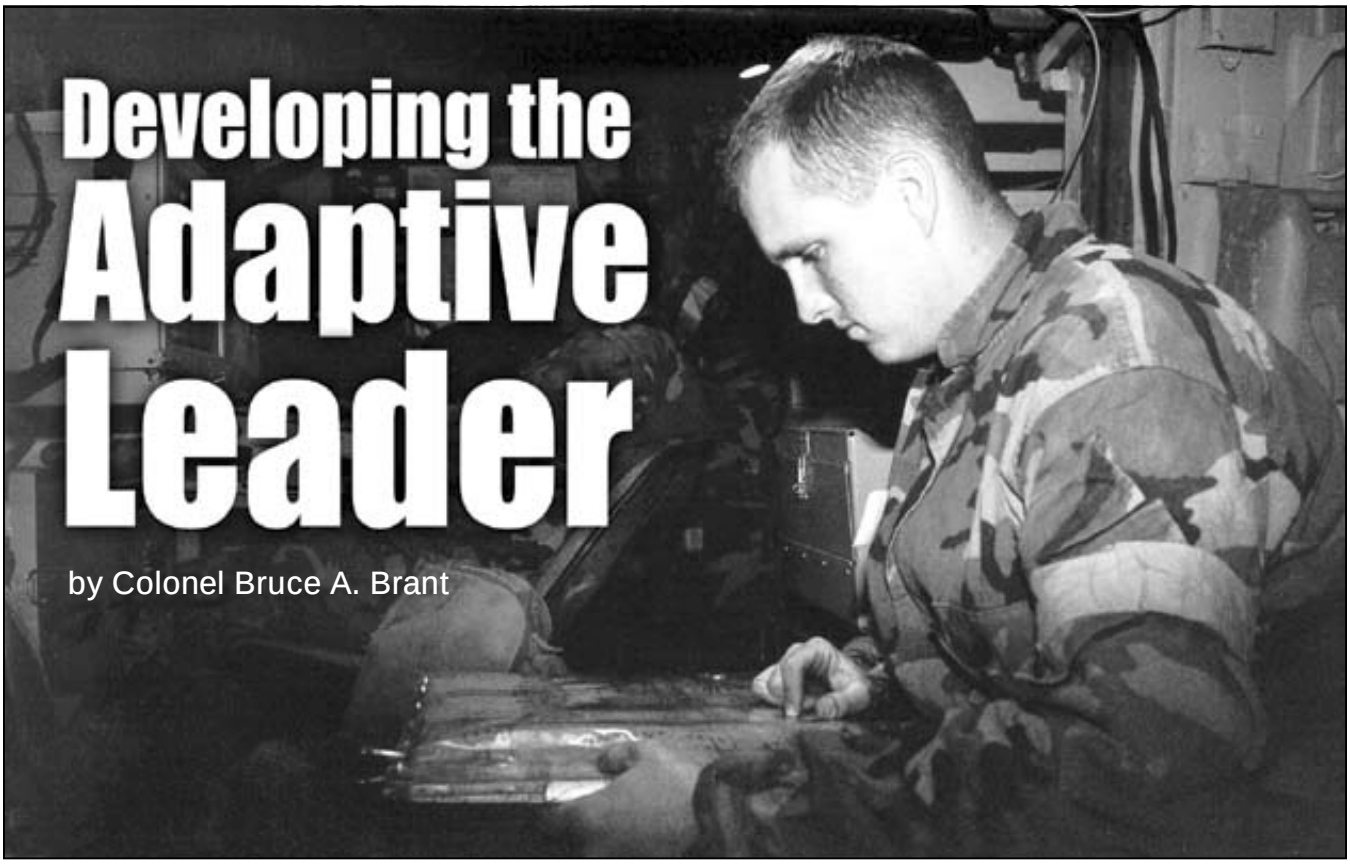
Developing the Adaptive Leader

by Colonel Bruce A. Brant



NTC, Fort Irwin CA, January 2000

"Sir, we have to *go*—the enemy tanks are about to break through the perimeter wire!" the brigade command sergeant major (CSM) said as he rushed into the tactical operations center (TOC).

Sitting on a camp stool in front of the operations map and surrounded by multi-colored bubble charts, the brigade commander was motionless, seemingly mesmerized by the vertical map in front of him. Over the radios' blaring contact reports, they could hear the rumble of tracked vehicles. The situation was rapidly changing; decisions had to be made.

"Sir, we have to leave *now*!" The CSM grabbed the commander by the arm and dragged him from the tent just as the tanks broke through the wire, roaring past feeble attempts with small arms to stop them. The commander escaped to fight another day.

This scene is observed repeatedly at the Combat Training Centers (CTCs) when commanders, transfixed by actions to execute their plans, are unable to adjust to rapidly altering events. They have forgotten the maxim General (Retired) Richard E. Cavazos often cites during the Battle Command Training Program (BCTP), "Remember, in any plan, the enemy gets a vote." Commanders too often focus on the plan, not the enemy. They are unable to process the changes the enemy causes to the plan and figure out what they need to do about them.

If the quote attributed to Helmut von Moltke (The Elder) that "No plan survives contact with the enemy"[1] is true, then the first side to adapt to the changes presented by the enemy clearly retains the initiative. The winner will be the leader who continuously adapts to changing situations, quickly responds to shifting circumstances and proactively takes and keeps the initiative, thereby dictating the parameters of the action. Is the Army developing such leaders?

Today more than ever, the Army needs adaptive leaders. A quick survey of the state of the Army illustrates the need. The Army has one corps upgrading to Force XXI modernization to become the first digital corps. Modernization upgrades are still being tested in light units. Multi-composition units that fully integrate National Guard and Army Reserve soldiers into active commands are being developed. At the same time, soldiers are deploying to Bosnia and Kosovo for peacekeeping operations and to southwest Asia for conventional deterrence. Simultaneously, the Army is working toward the Chief of Staff's vision of total transformation of the force. This vision moves the Army from the heavy tank to a rapid deployment force based on the tactically mobile dismounted infantryman.

The possible adversaries also have changed. The days of linear warfare might never be seen again on a grand scale. Foreign armies watched Operation Desert Storm in the Gulf and learned three important lessons. First, don't let the US build up its combat power. Second, stay close to the civilians and ensure the media reports any collateral damage. Finally, create a large number of American casualties to directly attack the American center of gravity—the will of its citizens. US forces can expect a decentralized, noncontiguous, high-tempo battlefield with asymmetric threats. The US Army will need to be ready for combat immediately upon deployment. The next enemy won't allow us time to prepare, as Saddam did in Desert Shield.

Kosovo provides a good illustration of what can be expected. To counter the pinpoint accuracy of Air Force laser guided munitions, Serbian air defense didn't turn on radars. And because the radars did not radiate, the Serbs couldn't be located and destroyed as effectively. This kept US aircraft at a higher altitude

because the air defense threat at lower levels was still present. Target acquisition, accuracy and battle damage assessment were greatly hindered by flying at higher altitudes to minimize casualties. CNN broadcast worldwide any collateral damage or civilian casualties. This impacted the NATO nation alliances' targeting efforts and world opinion. The enemy effectively adapted to the American way of war.

British military historian Sir Michael Howard wrote, "I am tempted to say that whatever doctrine the armed forces are working on now, they have got it wrong. I am also tempted to declare that it does not matter….What does matter is their ability to get it right quickly, when the moment arrives."[2]

Former Chief of Staff of the Army, General Gordon R. Sullivan says, "As we, the leaders, deal with tomorrow, our task is not to try to make perfect plans….Our task is to create organizations that are sufficiently flexible and versatile that they can take our imperfect plans and make them work in execution."[3]

Several elements influence the development of the adaptive leader: cultural surroundings and expectations, character, education, force modernization and training.

Culture. The American way of life gives US soldiers a great advantage over other societies in preparing adaptive leaders. The vastness of the area, its varying geography and weather and the multicultural demographics all aid in creating an open mindedness not found in many other countries. Americans are raised making choices, having options and hearing divergent opinions. Few Americans stay in the same geographic location their entire lives. Traveling around the country or overseas is the norm.

Technology is part of almost every household with the constant innovations in computers and telecommunications. We all adapt to Bill Gates' latest software version. The pace of change, always accelerating, molds Americans like few other cultures.

Many countries place a great value on being homogeneous, being part of the crowd and not upsetting tradition. Americans celebrate individuality, the entrepreneur and the nonconformist.

This culture develops a creative citizen from whose intellect and insight innovative ideas flow. All of this allows the citizen to form an attitude and ability to make a choice rapidly when given variables and to change.

Ironically, many Americans stereotype the military as closed-minded, tradition-bound, rigidly disciplined robots with no ingenuity. Nothing could be further from reality.

Character. Edgar F. Puryear's latest study on generalship states, "I have concluded that there is a pattern to successful leadership….The most important of these qualities is character."[4] Character is the filter through which all decisions are made. The leader may have perfect knowledge of what is going on, what needs to take place, his resources and how to use them, and the strengths and weaknesses of his forces and the enemies, but his character influences his decision of what action to take.

What is character? Puryear says it "…cannot be defined; it must be described." His description of character comes from decades of studying successful and unsuccessful leaders. He describes the character pattern of the greatest leaders as "…a selfless desire to serve; to accept the responsibility for decision making, which Eisenhower said is the essence of leadership; to have the 'feel' or 'sixth sense' in decision making…to read widely, to serve under senior officers who selected and mentored them, the reward meaning longer hours, greater challenges and greater sacrifices for themselves and for their families; to be concerned for and considerate of their people; to realize that the ability to delegate determined how far they would go; and when problems surface, to fix the problem, not the blame."[5]

General Matthew B. Ridgway described character as "…standing for self-discipline, loyalty, readiness to accept responsibility and willingness to sacrifice when necessary and, in my opinion, for faith in God."[6]

Values are a major part of character. Values are a few words that describe what's important. Values build discipline. They represent what we want our soldiers to be. They describe what our nation expects of its soldiers. Finally, and most importantly, they serve our Army's purpose on the battlefield.[7]

Values help leaders by consciously or subconsciously allowing them to do the right thing. With values as the foundation, the leader's character is the prism through which all other components of the decision-making process are forced to arrive at the leader's final conclusion.

Education. No other military has the extensive school system or emphasizes civilian education as the US Army does. Each stage of progression of the NCO or officer is developed through the school network. An added bonus to the structured curriculum in many courses is the use of electives, allowing students to fill the gaps in what they believe is needed for their own personal growth.

An additional benefit is the attendance by other services and countries to Army courses. This opens the student to diverse opinions, tactics, techniques and cultures. Many courses offer history and battle staff rides to historical battle sites.

Learning from the past, especially on the ground where the action took place, increases the basis from which to draw future judgments. The purpose of the history instruction is not to try to have leaders make decisions by recreating the circumstances of the past, but to open perspectives on why decisions were made by leaders in certain conditions.

Self-education is a *must* for all soldiers. This includes not only learning the mechanics of the profession, but also reading studies of history, biographies and leadership that add to the mental "hard-drive" from which a leader can draw to make a decision.

Force Modernization. The Army is constantly changing. This is an additional factor in the development of the adaptive leader. Ask the typical division artillery or brigade commander

No other military has the extensive school system or emphasizes civilian education as the US Army does.

how many firing data and fire support computer systems he learned, and he'll probably tell you Field Artillery digital analog computer (FADAC), TI-59, tactical fire direction system (TACFIRE), light TACFIRE, the variable-format message entry device (VFMED), battery computer system (BCS), backup computer system (BUC), maybe the initial fire support automated system (IFSAS) and advanced Field Artillery tactical data system (AFATDS). The list doesn't include the many versions of software for each system. Technology forces adaptation.

Leveraging technology has increased the tempo of operations, speed of maneuver, precision of firepower and the pace at which information is processed.[8] The adaptive leader learns to be part of the new technology, using it to increase productivity and understanding, to monitor and influence and to enhance his ability to lead.[9]

Training. Doctrine specified in *FM 25-100 Training the Force* and *FM 25-101 Training the Force: Battle Focused Training* works—if followed. Training begins in knowing the basics and being technically and tactically proficient. The leader's soldiers must be skilled in their jobs. Behavioral studies at the CTCs concluded that individual job or task competence within an organization was a primary determinant of group effectiveness in the organization. The better trained the soldiers, the better the unit.[10]

Most units base training schedules on CTC train-ups and deployments as well as real-world contingencies. The CTCs provide the best training in the world, short of actual combat, to teach a leader how to adapt to fast-changing situations and using rapidly depleting resources.

The adaptive leader learns to be part of the new technology, using it to increase productivity and understanding, to monitor and influence and to enhance his ability to lead.

Possibly the best experience gained from the CTCs for the leader is dealing with friction. Military philosopher Carl von Clausewitz's concept is, "Everything in war is very simple, but the simplest thing is difficult. The difficulties accumulate and end by producing a kind of friction that is inconceivable unless one has experienced war. Friction is the only concept that more or less corresponds to the factors that distinguish real war from war on paper."[11] Anyone who has experienced the CTCs knows what can go wrong, *will* go wrong. Experiencing friction, the leader learns how to adapt to unknown or unplanned problems.

Why Aren't We Better? In a culture that embraces transformation and common core values, is the world leader in technology and has the most sophisticated military school system and training built around the CTCs and after-action reviews, why aren't leaders better at adapting to changing situations? There is no single answer. What are believed to be strengths may actually be transforming leaders into followers who are unable to rapidly make a decision. What do we need to change to ensure the Army has adaptive leadership?

Change Our School System. Our curriculum development has little structure geared toward the processes needed now, much less two or more years from now. An example is the teaching of DA Form 2404 Equipment Inspection and Maintenance Worksheet and DA Form 2408-14 Uncorrected Fault Record in the primary leadership development course (PLDC). During PLDC, only two hours are devoted to turning a driver into the first-line leader who makes the critical call on the unit status report of whether or not his vehicle is "Fully Mission Capable." One of the two hours is spent teaching outdated forms. There is no foresight.

The Command and General Staff College, Fort Leavenworth, Kansas, grades tactics on whether all the elements of the order are present, not the plan itself. The *process* is graded over the usefulness of the *product*.

Commenting on the campaign in Kosovo and the challenge to old-school military thinking, General Wesley Clark, former Supreme Allied Commander in Europe (SACEUR), said, "I don't think the armed forces in our country should assume, as a matter of staff college training, that when you go into one of these operations you're going to be given carte blanche—bomb anything you want, get the mission done. It's not pure war."[12] Are the staff colleges teaching Kosovo, Bosnia, Haiti, Panama, Honduras, East Timor or the linear warfare of the Fulda Gap?

General Clark commented that one of the reasons the armed forces had trouble with Kosovo was "…because we'd been to school on Desert Storm. Desert Storm was an entirely different battlefield. It was a battlefield that was clean. It was clean of civilians, mostly clean of refugees, clean of vegetation. It was pretty much clean of media, too. You have to be prepared in the future to fight on a cluttered battlefield. Where there are civilians—friendly and not-so-friendly civilians—where there's tough vegetation. Where there's tough weather."[13]

In mid- to high-level Army schools, students need courses on how to be open to change. This is being taught at top-level business schools and corporations to prepare executives to embrace the idea that change happens, to anticipate it, monitor it, adapt to it quickly and be ready to change quickly again and again.[14] Most Army schools teach *what* to think, not *how* to think.

Change Our Philosophy of Technology Dependence. Armies have sought dominance through technology since David and the slingshot. But for every new technology, there always has been a counter. A Training and Doctrine Command (TRADOC) study of Operations Just Cause in Panama and Desert Storm in the Gulf found "…that battlefield leadership had to do with everything but equipment. Once the ability to communicate was established, the specific hardware pieces were far less important than what transpired on and through the lines."[15]

Military analyst and author Ralph Peters observed, "…we have fallen into the old American trap of seeking technological solutions to human problems, of so immersing ourselves in questions of form that we overlook fundamental issues of functions."[16] This is demonstrated in TOCs everyday when an S2 tells the commander his computer says they have destroyed "x" number of enemy vehicles but cannot tell him where the enemy strength is.

It's also demonstrated when the operations order (OPORD) emailed to a subordinate unit from the higher headquarters is never received. New technology seems to reduce the fog of war by allowing better analysis of the en-

emy force, but it raises the friction of war by the failures of the systems. Who hasn't lost a transaction in the Standard Installation/Division Personnel System (SIDPERS) III?

Ralph Peters may have said it best: "We will face a dangerous temptation to seek purely technological responses to behavioral challenges, especially given the expense of standing forces….We must beware of wonder weapons that offer no significant advantage in a changing world….We will fight in cities, and this brutal, casualty-prone, dirty kind of combat will negate many of our technological advantages while it strains our physical and moral resources."[17] Leaders who focus on the technological solution are slow to change to an asymmetrical challenge.

Change the Way We Train Company/Battery Leaders. Another problem becoming more prevalent throughout the Army is the limited training time given to the company or battery commander. Every exercise seems to be part of at least a battalion exercise, and every event is evaluated. There is little time for the commander to experiment in the field without being graded.

In 1930, Lieutenant Colonel George C. Marshall invited German Captain Adolf von Schell, who had more than four years of combat experience on several different fronts, to lecture at the Infantry School on small unit leadership. Marshall later published his lectures as *Battle Leadership*. Von Schell commented that, "The more freedom allowed a subordinate leader in his training, the better the result will be. Why? Because he is made responsible for results and allowed to achieve them in his own way….War is governed by the uncertain and the unknown and the least known factor of all is the human element."[18] The small unit leader must be given ample time to learn in an environment that doesn't hinder initiative and allows him to become well grounded in the fundamentals.

Change Home-Station Training to Make it More Imaginative. To prepare an adaptive mind, units need to train to *chaos*. Chaos is what leaders will find on the battlefield. Home-station training, even the external evaluation, is too predictable.

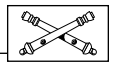
Take two different battery external evaluations. In one, the multiple-launch rocket system (MLRS) battery commander is called to perform missions at Fort Sill. He knows where he's going to live fire and has been there many times. He knows where his resupply is going to be and how to get meteorological messages—just about the entire event is predictable.

Now, take the airborne battery commander and his external evaluation. Going into an off-post drop zone as part of an infantry task force, his troops and equipment are spread out over a dozen aircraft. Some of his equipment will never arrive. Several of his troops will be hurt on the jump. He goes out the door of the aircraft, in the middle of the night, not knowing where he will land, where his howitzers will be, where his troops will be, where the enemy is or where his observers are. All he knows is that he has to find a howitzer, a crew, get communications with observers, compute data and put rounds down range in 30 minutes or less. It's chaos. With practice, he can adapt.

Units can plan exercises to include some elements of friction, which trains leaders' judgment, common sense and resolution. Units can take the predictability out of exercises and promote training to chaos.

It's possible to transform individuals so that creative, adaptive behavior is embedded in them. Today's Army leads the way in developing the leader who is flexible and adaptable. But outdated curriculum in our Army schools, over centralized and predictable training, a fear of failure by subordinates, lack of time and unpredictable training schedules all force leaders to become reactive instead of visionaries able to adapt to whatever they encounter. We can do better.

The small unit leader must be given ample time to learn in an environment that doesn't hinder initiative and allows him to become well-grounded in the fundamentals.



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Decision Making in the Information Age

Moving Beyond the MDMP

by Major John D. Hall

Light Digital Tactical Operations Center

Since the inception of the Army's Force XXI modernization program, the pages of professional military journals have been full of articles predicting how information age weapons and command and control (C^2) systems will change the nature of warfare. "The debate surrounding automated C^2 systems and their impact on battle command has been particularly intense, with many articles making predictions about how advanced information technologies will lead toward dominant battlespace knowledge."[1]

Automated C^2 advocates assert that emerging technologies and the resulting information dominance will vastly reduce, if not eliminate, the friction and fog of war, providing the commander and his subordinates with nearly perfect situational awareness. Thus, the proponents of automated C^2 believe that emerging technology will "enable commanders to see and understand the entire battlefield, and as a result, win the war."[2]

Whether or not these predictions will come true is certainly debatable. A number of commentaries on information age control systems present rational arguments against automated C^2. Most of the articles critical of the concept contend that information age technology, although rapidly improving, will require many more years of development and experimentation before computers can meet all the conditions necessary to control modern forces on the battlefield.

Another frequently articulated position is that automated C^2 systems undoubtedly will reduce uncertainty on the battlefield, but they will fall short of achieving nearly perfect situational awareness. This group of authors argues that regardless of whether or not we use automated or manual systems, intuitive skills always will be called upon to bridge the gap between the information provided by the C^2 systems and the information required by a commander to make decisions.[3] Hence, there's a perfectly rational argument that war planning will continue to rely on the use of assumptions to fill gaps in information that is required but unavailable.[4]

Nonetheless, the results of a number of digitized C^2 experiments, such as the advanced warfighting experiments (AWEs) and Army Experiment 5, have demonstrated the potential for some sort of automated C^2 system. The Army almost certainly will rely on computers and digital communications systems to provide automated C^2 of forces in combat at some point in the future. We may find the situational awareness they provide falls short of perfection in terms of timeliness, accuracy and completeness, but the likelihood is that, eventually, computers will give commanders an unprecedented ability to see the enemy, the terrain and themselves.

Ironically, the debates regarding the impact of automation on C^2 have largely neglected to discuss how to maximize the opportunities that an improved situational awareness may provide. In particular, the proponents of automated C^2 fail to analyze how our current methods of tactical decision making will fit within the framework of automated C^2. Specifically, there has been virtually no discussion regarding how to supplement the military decision-making process (MDMP) with other decision-making tools that will allow us to take advantage of the opportunities that dominant battlespace knowledge provides.

This article examines how the MDMP fits within an automated C^2 environment, and it introduces one such supplemental decision-making technique—the Recognition Primed Decision Model—that, if used, will help to maximize the potential of improved situational awareness.

The Nature of the MDMP. The Army's MDMP is one of a group of decision-making models referred to as "analytical" or "rational choice" models. Analytical models use a series of stages to move from identification of the problem to the implementation of the best

possible solution. Seven steps are used in the MDMP: receipt of mission, mission analysis, course of action (COA) development, COA analysis, COA comparison, COA approval and, finally, orders production.

One of the advantages to using analytical models like the MDMP is that when used properly, they result in the selection of the optimum COA. The thoroughness of analytical models also means that commanders and their staffs are less likely to overlook important information as they approach the mission at hand.

Like other analytical models, the MDMP is exceptionally versatile in that it's useful in a variety of situations across the entire spectrum of operations. The MDMP is also an extremely valuable tool for helping inexperienced commanders and staffs determine what they know and what they don't know regarding the situation.[5] Perhaps most importantly, the correct use of the MDMP usually results in a well-integrated, coordinated and synchronized plan articulated via a detailed operations order.

Yet, this excellent model for making decisions also has significant disadvantages that make it less suitable for decision making in the information age. *FM 101-5 Staff Organization and Operations* readily acknowledges that the greatest weakness of the MDMP is that it's time-consuming.[6] Like other rational decision-making models, the MDMP can sometimes lead to hyperrationality or the attempt to apply deductive and quantitative reasoning to situations where they don't apply. The most significant shortcoming of the MDMP, however, is that the circumstances of actual combat often prevent commanders and staffs from formally analyzing a situation, especially at echelons of brigade and below where there are no formal planning staffs available.

An analysis of Combat Training Center (CTC) rotations illustrates this point. As training units receive new missions, the commanders and staffs use the MDMP in the standard or time-constrained form as the means of developing their plans. However, once they move from the planning to the execution phase of the operation, commanders cannot afford to take the time to use the MDMP as a means of analyzing the current situation and determining how to best continue the operation. Instead, they rely on their previous experience and intuition as a means of accomplishing the mission.

If the MDMP is less suitable as a model for execution phase decision making under the current C^2 system, then it most definitely will be unsuitable in an automated C^2 situation where rapid decision making is crucial to taking advantage of the greater situational awareness that computers will provide. While the Army has a great planning system in the MDMP, it desperately needs a model for decision making in the execution phase of operations. This is particularly true at the lower echelons of command, where staffs are less robust, commanders are closer to the fight and the time available and the constantly changing situations make analytical decision-making systems inappropriate.

Fortunately, the Army has sponsored research in this area. The research firm of Klein Associates examined how military commanders make decisions using real-time information in high-pressure, high-stakes, rapidly changing and dangerous environments. During a 15-year period, Dr. Klein and his staff conducted studies in what he refers to as "naturalistic" environments, analyzing Army and Navy commanders, fighter pilots, paramedics, fire chiefs and other professionals required to make split-second decisions. The result of these studies was the development of a decision-making model Klein calls the "Recognition Primed Decision Model."[7]

The Recognition Primed Decision Model. The advantage of Klein's model is that it captures how commanders use their previous experiences to help visualize an existing situation and then use their intuition and visualization skills to choose an acceptable COA. Klein discovered that commanders often recog-

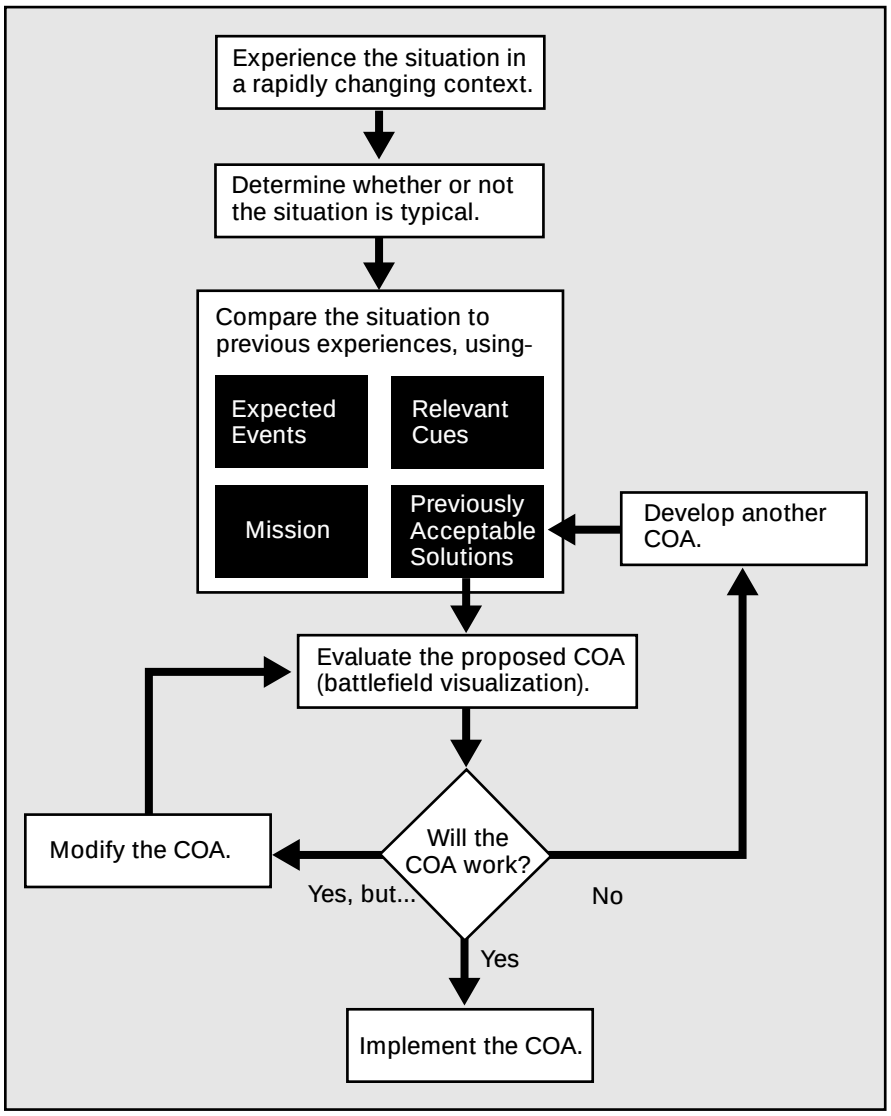
nized a given situation as similar to a previous experience. These commanders immediately understood what was happening and were able to devise a suitable COA without comparing multiple options.

Remarkably, Klein found that these deliberations often took less than one minute. He also discovered that on the few occasions when commanders did examine multiple options, they never compared them against one another based on some sort of rational criteria. Instead, they thought of one option at a time, visualized its execution in their minds and then either accepted it or rejected it as unsuitable.

If the option was unsuitable, the commanders examined another option and repeated the process in their minds until they found an acceptable solution. Hence, most successful commanders tended to evaluate each solution on its own merits rather than against an alternative solution.[8] The figure shows how Klein's Recognition Primed Decision Model can be applied to a purely military environment.[9]

Under the guidelines of recognition primed decision making, the focus is on the way commanders assess a given situation to determine how familiar it is rather than on comparing options. Likewise, COAs are evaluated by the commanders' visualizing their execution rather than by formally analyzing or comparing them. By imagining how the COA will be executed, commanders can spot weaknesses in the solution and develop ways to work around those weaknesses. This often makes the original COA even better.

Klein also found that commanders usually look for the first workable solution they can find, not the best option. Most importantly, the Recognition Primed Decision Model places the emphasis on being poised to act in a time-critical situation rather than on waiting for multiple COAs to be analyzed before taking action.[10] Thus, by taking advantage of the intuition gained from previous experiences and the power of battlefield visualization, commanders can make reliable decisions faster than they can under the MDMP.



Recognition Primed Decision Model. One alternative for the leader to determine his course of action (COA) during mission execution is to apply this model.

Most experienced leaders have come to realize this over the years and, in time-critical situations and high-pitched battles, have relied on their intuition and visualization skills to solve complex problems quickly. The trouble is that until Klein developed the Recognition Primed Decision Model, it was difficult to articulate just how commanders were arriving at their decisions. In other words, commanders knew they were making decisions, but they weren't sure how they were making them.

It took almost 15 years of constant research before Klein was able to synthesize naturalistic decision making into his model. The key to decision making in modern and future battlefield environments isn't whether to use the MDMP or the Recognition Primed Decision Model but recognizing if one model is more appropriate for a given situation than another and determining when to transition from one model to the next. The Recognition Primed Decision Model shows how the power of intuition and visualization can help in situations where the MDMP is inappropriate.

Intuition as a Combat Multiplier. Intuition is the process of recognizing a situation without realizing how we do it. Most people tend to think of intuition as an inborn trait—one that some have and others don't. Surprisingly, evidence indicates that rather than being instinctive, intuition grows out of previous experiences.[11] People compile their experiences over time to form a sort of mental database, which in turn allows them to examine a situation and determine how it relates to previous events.

A broad base of experience provides the commander a series of conscious and subconscious patterns regarding the mission, the enemy and his own unit's abilities. Based on these patterns, the commander formulates clear expectancies, and these expectancies drive how he should react in a given situation.

When the recognized patterns match previous experiences, intuition enables the commander to use tactics that have been previously successful. When the patterns don't match previous experiences, intuition gives him the feeling that something is "not quite right" and leads him to approach the situation using an alternative COA.[12]

Besides providing facts from memory, experience affects the way commanders see the situation. Many times, experienced decision makers find themselves reacting to things that are *not* happening rather than to things that are. An expected pattern doesn't emerge, and this causes the commander to reevaluate the current situation.

When the intuitive commander senses a situation as atypical, he tends to pause mentally, gather additional information and try to get a better sense of what is occurring on the battlefield. Furthermore, he's often unaware of his use of intuition because he's not drawing on memories of specific events but rather a large set of similar incidences that have all blended together."[13]

Key to decision making in time-critical situations, the process of recognizing patterns and whether or not they are typical happens so fast that most of us aren't aware of it. This means that a well-trained commander instantly can recognize when a new COA is required and how much time he has to develop it.

This doesn't mean that intuition is infallible, however. Sometimes a commander's intuition will mislead him, causing him to make an incorrect decision. Nevertheless, even these failures have merit as they are added to the pool of other experiences and should cause the commander to choose a different solution the next time a similar situation appears.

Fortunately, the Army can train soldiers to develop that part of intuition that involves pattern matching and the recognition of familiar and typical cases. Expanding the base of experience through the use of exercises and computer simulations allows current and future commanders to develop the ability to size-up situations quickly and accurately.

The CTCs, for example, are excellent ways of gaining such experience. These exercises, like other good simulations, let the training unit stop the action, examine the events that occurred and cram many situations together, helping the commanders develop a sense of typicality.[14]

In the Marine Corps, Lieutenant General Paul Van Riper has guided organizations, such as the Marine Corps Combat Development Command (MCCDC) at Quantico, Virginia, to support intuitive decision making. The Marines have developed a number of exercises to improve rapid pattern-matching abilities. Analysis of the results of these exercises indicates the emphasis on pattern matching seemed more useful than formal analysis of alternate options."[15]

The Power of Battlefield Visualization. Battlefield visualization, or what Klein refers to as "mental simulation," forms the other key component of recognition primed decision making. Effective battlefield visualization is much more than accurate situational awareness. It's the ability to imagine people, equipment and events consciously and through a series of imaginary transitions and intermediate steps to determine how to arrive at a desired end state. Once the commander has determined how the situation is similar or different from those he has seen in the past, he develops a COA to solve the problem at hand.

A study conducted on behalf of the Army Research Institute (ARI) found that typical mental simulations work to satisfy three screening criteria. First, the proposed solution must make sense tactically. Second, it must result in successful mission accomplishment, and third, it must be complete enough to move from the current state to the end state. When a proposed solution meets these criteria, then the commander, in his mind, visualizes the execution of the COA, step by step, constantly on the look out for potential shortcomings.[16] If he can't find any shortcomings in the solution, then the process ends and he directs the implementation of the solution. If he identifies problems as he is visualizing its execution, the commander can modify the COA to work around the shortcomings, or he can reject the COA outright and devise an alternative solution.

Battlefield visualization serves several functions in decision making. It allows the leader to preview events as they might unfold in a future situation and examine a COA in his mind, searching for pitfalls to determine whether or not he should adopt it or look for an alternative. Visualizing the battlefield also allows us to make sense of the different, often conflicting queues on the battlefield and explain what is occurring.

Effective battlefield visualization takes a lot of effort. It moves beyond simply looking at a situation and understanding what is happening. It's a process that examines the information available regarding the current situation and attempts to deduce why things are happening the way they are and determine how to move from the current situation to achieve the desired end state.

In reality, battlefield visualization is what provides commanders true situational awareness. Without it, the Army will never realize the potential of its developmental automated C^2 systems. True situational awareness occurs only when a commander has combined his intuitive skills with the results of his visualization.

Disadvantages of the Model. As good as the model sounds, it isn't without disadvantages. One of the most important detractors is it's a highly individualistic process. The Recognition Primed Decision Model centers on the personality and experience of the commander, and therefore, it's a poor model for developing staffs or trying to build teams. It doesn't take direct advantage of the experience of a staff as well as the MDMP does because only the commander conducts the mental simulation. While the staff isn't precluded from doing a concurrent analysis, clearly it's more difficult to get the results of that analysis to the commander before he makes his decision.

Another disadvantage of the Recognition Primed Decision Model is its dependence on the experience of the decision maker. While commanders are typically the most experienced members of the organization, the experience they have may not be sufficient for the situation at hand.

The Army learned this lesson in the early 1990s when we sent soldiers who had trained for years to fight high-intensity combat into peacekeeping operations in Somalia and Haiti. While the commanders were certainly highly experienced when it came to warfighting, they didn't have enough experience in stability and support operations for the Recognition Primed Decision Model to be a suitable decision-making tool.

A third disadvantage is that although recognition primed decision making occurs naturally, it's often difficult for individuals to articulate how they are making their decisions. In fact, it's exactly this phenomenon that defines what intuition is. This same characteristic

also makes it difficult to develop programs that foster the development of intuitive decision-making skills. The difficulty in trying to improve someone's ability to do something he doesn't even realize he's doing is, obviously, a significant challenge to overcome.

Choosing the Right Model. Nevertheless, the results of studies conducted to date indicate that recognition primed decision making is a viable alternative to analytical models, such as the MDMP. This doesn't mean the model should be a replacement for the MDMP. The key to decision making in the information age will be knowing when one must compare available options and when one must forsake comparison in the interests of time. The MDMP and other rational choice models are most suitable when there's enough time available to compare multiple options, the decision maker lacks the experience needed to make an intuitive decision or when there is a need (real or perceived) to justify the decision.

Likewise, there are situations where recognition primed decision making is more appropriate. The Recognition Primed Decision Model is an excellent method to use when time doesn't make the comparison of multiple options practical. Also, when the commander has a high degree of experience with the current situation, using the Recognition Primed Decision Model can save considerable time: the commander already knows how he wants to tackle the problem at hand, so the staff doesn't waste precious time developing alternative COAs.

Finally, when the tactical situation is highly dynamic, the reduced decision timeline associated with the Recognition Primed Decision Model allows commanders to use time to their advantage. This is often referred to as "getting inside the enemy's decision cycle."

The real question commanders of the future will have to ask is when to switch from one decision-making method to another, and how to ensure the staff knows when the shift will occur. It could be when the unit crosses the line of departure. It could be when the enemy commander begins his attack, or it could be after the unit receives a mission that must be executed quickly. The decision is up to the commander. Regardless, it will be critical that his staff understands the circumstances under which the commander prefers to use one model over another if the staff is to work most effectively within his desired framework.

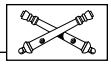
Conclusion. Klein's testing of his Recognition Primed Decision Model and subsequent testing by outside agencies have supported virtually all of Klein's theories. Nevertheless, the Army has been reluctant to adopt recognition primed decision making as an alternative to traditional models. Perhaps this is because of the disadvantages noted or because of the greater preference for the MDMP throughout the Army. Regardless, we should accept the fact that the Recognition Primed Decision Model is a natural method of making decisions and begin taking steps to develop these already existing, but institutionally suppressed capabilities in our leaders.

Just how to develop benign talents of intuitive decision making within the leadership is a greater problem to overcome, and therefore, additional research is required to determine the right methods of teaching this model. Some researchers have suggested using computer simulations to help accomplish this task. Other services, such as the Marine Corps, are experimenting with situational exercises. Regardless of the methods we choose, the Army will gain considerably once we find a way to harness the intuitive decision-making power that resides within its leadership.

The Army also should begin to integrate recognition primed decision making into its doctrinal manuals. At this early stage, it may only be mentioned as an acceptable option for commanders to choose from, the means by which it works and the situations where it's appropriate to use. As the techniques and procedures for training leaders to use the model are developed, the discussions in manuals can be expanded to provide more information about the model and maximizing its use.

Another option available is to develop training scenarios that support recognition primed decision making, and integrate them into existing CTC exercises. The greatest advantage to be gained from this approach is that commanders will learn when to switch from one model to another.

By knowing when to switch from analytical systems to intuitive systems, Army leaders rapidly can adapt to the dynamic situations we expect to encounter in 21st century military operations.



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A Day in the Life of a BCT First Sergeant

by Major Richard J. Anderson

First Sergeant (1SG) Clement was born to be a soldier. Clement is a weathered, no-nonsense, field soldier, capable leader and 15-month veteran of Bosnia—one of the first US soldiers to land in Tuzla in 1995 with the 1st Armored Division.

For the second time in an 18-year career, Clement has been assigned to "garrison" duty—this time as the senior enlisted leader of C Battery, 1st Battalion, 22d Field Artillery, a basic combat training (BCT) unit at the FA Training Center (FATC), Fort Sill, Oklahoma. Clement has had to get used to more paperwork and less direct contact with soldiers, staying out of the way of the battery drill sergeants. Crusty 1SG Clement also has had to work on polish and poise to be in the spotlight as a unique 1SG—the first female 1SG in the FATC. *She* is up to the challenge.

Although Jeannette (Jenny) M. L. Clement is not the first female first sergeant of an FA unit—that distinction belongs to First Sergeant Michelle Hartness of Headquarters and Headquarters Battery (HHB), 101st Airborne Division (Air Assault) Artillery of Fort Campbell, Kentucky—she's the first in the FATC and second in the FA. 1SG Clement reported to the FATC in June 1999, the same month gender-integrated training (GIT) started at Fort Sill.

Ironically, June 1999 was not the first time Clement had been inside her office. She's married to retired Master Sergeant Michael Clement, Special Forces, who in the late 1980s, was a drill sergeant in C Battery. Jenny returned to the same unit and building where her husband had been assigned more than a decade earlier. In addition to the usual 14-hour training days, six days a week, 1SG Clement is a wife and mother of two sons, Carl, age 7, and Neil, age 5.

Born at Fort Belvoir, Virginia, as the daughter of an Army aviator, Jenny Clement had the Army in her blood from the beginning. She enlisted in 1981 as a Military Occupational Specialty (MOS) 93F FA Meteorological Crewmember and, after advanced individual training (AIT) at Fort Sill, was assigned to the 7th Infantry Division (Light) at Fort Ord, California. She subsequently has been assigned to various positions from the section to the division artillery levels in the 101st Airborne Division and in Germany. She also served a tour with the US Army Exhibit Team, which is a team that travels around the country to high schools in 18-wheelers to help Army recruiters. Her previous assignment was as a platoon sergeant in HHB and NCO-in-charge (NCOIC) of the S2 shop, both in the 101st Division Artillery during her third tour at Fort Campbell.

Jenny spent 15 months in Bosnia during Operation Joint Endeavor. She landed in Tuzla on the first planeload of 1st Armored Division personnel to form Task Force Eagle in December 1995. While deployed, she served as a meteorological section leader and a member of the division's fire coordination element (FCE).

After spending most of her career in tactical units, Clement has had to adjust to life at the FATC. She has had to learn to work through the drill sergeants, having never been one herself. In BCT units, the drill sergeants conduct virtually all the training and the cadre serves in supervisory and administrative roles. This, perhaps, has been the toughest part of the transition as 1SG Clement has always been a hands-on leader.

While the typical Army duty day is long by civilian standards, for BCT cadre, it's even longer—starting at 0430 and ending between 1800 and 1900 hours, Monday through Saturday, with checks of the battery's areas on Sundays. 1SG Clement's day is no exception. (The drill sergeant's day starts before the soldiers get up at 0430 and goes until lights out at 2130.) Cadre and drill sergeants continue at this pace for nine-week stretches until they receive a cycle break between classes.

Monday through Saturday, physical training (PT) starts at 0500 and lasts an hour. Six days a week, 1SG Clement participates in PT with the soldiers. Her role is to ensure exercises are being done correctly, running formation integrity is maintained and stragglers are supervised. With typically four different fitness ability groups in a BCT battery running each morning, this task is not as easy as it might sound, especially with the widely varying degrees of motivation of the soldiers.

For 1SG Clement, PT is an important part of the day. It's an excellent way to evaluate soldiers and a chance to lead by example. For soldiers who aren't used to running or doing push-ups, seeing a 37-year-old woman leading from the front can be inspiring. This can pay double dividends—motivating male soldiers who don't want to be outdone and female soldiers who don't know what their true abilities are yet.

A BCT first sergeant's level of involvement with the soldiers during the training day depends on the type and phase of training. The nine weeks of BCT have three phases. The first phase, called "Patriot," introduces soldiers to the Army and Army values in the classroom. "Gunfighter," the second phase, focuses on basic rifle marksmanship, other weapons and selected common skills. The final "Warrior" phase tests the soldiers by having them apply their newly acquired skills in a field environment.

During classroom presentations for the trainees, 1SG Clement focuses on administrative duties. A battery can have up to 256 trainees at one time, so the amount of paperwork can be considerable, especially when the trainees turnover 100 percent every nine weeks.

At week four, the battery transitions to the Gunfighter phase and the first sergeant's involvement increases dramatically. She, the battery commander and executive officer supervise all live-fire training. Soldiers receive 14 periods of instruction on basic rifle marksmanship at the various ranges throughout Fort Sill. They also receive training on hand grenades, rifle bayonet, hand-to-hand combat and fighting with pugil sticks as part of the Gunfighter phase. 1SG Clement oversees her soldiers at the Confidence Obstacle Course, the Combat Conditioning Course and the NBC/mask confidence chamber—courses that challenge a variety of soldier skills, to include physical fitness, teamwork and personal courage. At this point in the training, BCT soldiers are beginning to bond and the results of their efforts as a team are visible.

The final Warrior phase of BCT culminates in week eight with a 72-hour

field training exercise (FTX). During the FTX, the soldiers apply all their BCT training in a demanding tactical environment. The FTX is the cadre's chance to be innovative—to go the extra mile to ensure soldiers receive realistic, stressful, but risk-managed training.

One high point of 1SG Clement's tour to date was when C Battery hosted Secretary of the Army Louis Caldera for a visit in March. Secretary Caldera saw soldiers conducting lane training during an FTX, the battery's tactical operations center (TOC), construction of the battery defense and an ambush. While the Secretary received some information from the battery cadre during the training, the majority of his time was spent being briefed by trainees. This is indicative of 1SG Clement's adventurous spirit—her risk-taking—letting the most inexperienced soldiers not only meet the Army's top official, but also be his primary briefers.

After their FTX, the soldiers prepare for their final inspection and graduation. The graduation ceremony is no small event in the life of the battery. Invariably, hundreds of relatives come to visit their soldiers, and graduation is as much a chance for the battery to display the professionalism of the Army as it is to signify the completion of BCT. After graduation, the 1SG's administrative load remains high because, in less than two days, all graduates are shipped to their AIT units and holdovers are processed for recycling or remedial physical fitness training.

Once the soldiers are shipped out, the pace slows for two weeks in a cycle break. During that time, the battery conducts mandatory training and rehearses for the upcoming cycle, and perhaps most importantly, the cadre takes leave or resumes an eight- to 10-hour workday. With the arrival of new trainees, the challenge of turning civilians into soldiers starts again.

1SG Clement realizes the importance of the trainees' first weeks of exposure to the Army and the long-term effects on the future of the fighting force. She thinks it's important to have women in leadership positions in the initial entry training (IET) environment. "Having women drill sergeants and even cadre members higher up the chain of command at IET is important because women trainees see them as proof that long-term career progression for women in the Army is quite possible," Clement said.

1SG Clement takes her job very seriously. Never having been a first sergeant, she did her homework and took the cue from friend 1SG Bert Vaughan of the 82d Airborne Division at Fort Bragg, North Carolina. Among other things, he told her the 11 expectations for a first sergeant, which have served as her guide. (See the figure.)

As to her future, 1SG Clement sees a variety of possibilities after IET. Sergeant Major of the Field Artillery is a position yet to be held by a woman. But as already seen, 1SG Clement won't let precedence—or lack of it—deter her.

Although she never has mentioned the position as a goal, with her experience, talent and determination, there may be yet another "first" waiting for her in the future. *She'll* be up to the challenge.

Expectations for a First Sergeant

1. **Desire and Motivation:** The individual wants to be a first sergeant.
2. **Integrity:** Commanders and soldiers trust the first sergeant and know that if they need to talk to him/her, they can.
3. **Leadership:** A strong first sergeant is a good mentor. Soldiers want to emulate the first sergeant who "leads the way."
4. **Dedication to Duty:** The first sergeant develops a system to accomplish all missions. This may mean starting before the duty day begins and continuing after the duty day ends.
5. **Tactical Knowledge:** The first sergeant spot-checks positions or maneuver tactics to strengthen an element's leadership.
6. **Counseling and Development:** The first sergeant teaches platoon sergeants how to perform and how to develop their subordinate NCOs.
7. **Knowledge of Rules:** The first sergeant stays abreast of changes to all regulations, standing operating procedures (SOPs) and unit policies.
8. **Ability to Speak:** As the company's senior enlisted advisor, the first sergeant speaks to the commander on behalf of the soldiers.
9. **Standard Setter:** The first sergeant leads from the front and sets the standard—not only in uniform appearance and PT, but also in off-duty conduct.
10. **Time Management:** The first sergeant develops a schedule and budgets his/her time to take care of paperwork and meetings in the office and soldiers and unit operations out of the office.
11. **Uniform Code of Military Justice:** The first sergeant does what's right and recommends appropriate punishment—always.

1SG Bertram F. Vaughan, 2-505th IN
82d Abn Div, Fort Bragg, NC

Major Richard J. Anderson, until recently, was the Executive Officer of 1st Battalion, 22d Field Artillery, part of the Field Artillery Training Center (FATC), Fort Sill, Oklahoma. Currently, he's the FATC S3. His previous assignments include Foreign Area Officer duties as the Security Assistance Officer in Estonia, Cooperative Threat Reduction in the Ukraine and Military-to-Military Assistance in Belarus. He also has served as a Firing Battery Commander, Battalion Fire Support Officer (FSO) and S1 in the 7th Infantry Division (Light) at Fort Ord, California, and a Firing Battery Executive Officer and Company FSO with the 1st Armored Division in Germany. He is a graduate of the George C. Marshall Center's Institute for Eurasian Studies and holds a Master of Military Science and Operational Art from the Air University, Montgomery, Alabama, and a Master of International Affairs and Russian Studies from Columbia University in New York.

Virtual, Live and Simulated Training

Getting Fires Back Into The Fight

by Lieutenant Colonel Howard E. Lee

Simulations represent a powerful resource for training today's Army, offering a broad spectrum of flexible training and mission rehearsal tools available to every leader and unit. Unfortunately, by and large, our simulations have been developed to support maneuver training and often neglect the accurate replication of fires and fire support.

At least in part because of this inability to accurately replicate the effects of fires within the various simulation training environments, a growing number of maneuver commanders are questioning the relevance of artillery to the execution of their missions. In addition, many artillerymen are losing the skills to execute complex, integrated fire support scenarios effectively because they rarely practice such operations at home station.

The Field Artillery School at Fort Sill, Oklahoma, is moving aggressively to address these training environment and simulation issues. The school has undertaken several initiatives to fix the replication of fires at the Combat Training Centers (CTCs) and in our models and simulations. During the next couple of years, commanders in the field should have the opportunity to see many of these initiatives come to closure.

Initiative 1: Training in Virtual Environments. Advances in computer technology have afforded the Army the opportunity to train using virtual reality. Simply put, these are environments in which the trainees can interact with each other and with other forces on a computer-generated, three-dimensional battlefield. There are several programs that make use of this technology, but the primary one is the close combat tactical trainer (CCTT). CCTT is the next generation beyond the venerable simulations networking (SIMNET) technology familiar to a majority of our ground maneuver brethren. CCTT provides an excellent training environment for the maneuver forces but falls short in the areas of fires replication and fire support participation.

CCTT suites are currently located at Fort Hood, Texas; Fort Knox, Kentucky; and Forts Benning and Stewart, Georgia. During the next three years, CCTT suites are scheduled to be fielded to Europe; Korea, Fort Carson, Colorado; Fort Riley, Kansas; and Fort Lewis, Washington (the latter, tentative).

In assessing effective training leverage points, the FA School determined that CCTT needed to be a focus and, as such, several projects are underway.

The first is to fix the CCTT replication of fires. At the moment, artillery has essentially no effect on the CCTT fight. A direct hit from a 155-mm high-explosive projectile causes no casualties among the dismounted infantry, let alone the armored forces fighting the battle. As a result, maneuver commanders are gradually getting away from using artillery correctly in support of their operations. Further, they may have a limited respect for artillery as a casualty producer should they find themselves in the middle of an actual enemy barrage.

Recommended database and algorithmic modifications that address how CCTT replicates fires have been and are continuing to be developed. Commanders should begin seeing better attrition and battle damage effects from artillery-delivered munitions in their CCTT training within the next year. In addition, more specialized munitions, such as artillery-delivered mines, various types of smoke and the new sense and destroy armor munition (SADARM), may be added to the selection of ammunition available to forces fighting on virtual battlefields.

The second area of concern involves the replication of the fire support structure. Here, also, the CCTT training environment is deficient. A standard suite of CCTT modules includes 14 M1A1 Abrams tanks and 14 M2A2 Bradley fighting vehicles but only one fire support team vehicle (FIST-V). Efforts to provide a second FIST module to each site have proved cost prohibitive.

The current alternative under development is to provide a "reconfigurable kit" that allows a standard M2A2 module to be converted into a Bradley fire support team vehicle (BFIST) module complete with onboard hand-held terminal units (HTUs) and lightweight computer units (LCUs).

The goal is to field two full-scale reconfigurable kits to each CCTT site. Maneuver commanders still will have to decide whether to have FIST participation or a fully manned Bradley company. Although not a perfect solution, it's a step toward providing the correct fire support structure to support combined arms operations.

Another component of this initiative is to enhance the ability of artillerymen to use CCTT for training. The objective is to turn the facility over to an FA battalion and then provide it a realistic battlefield environment focused on training the entire fire support structure. Combat scenarios using the CCTT's semi-automated forces (SAF) can be generated, and the artillery battalion commander then will be able to conduct focused fires and fire support training for his battalion using CCTT.

The goal is to have all nine company FISTs participating on the virtual battlefield. They would communicate and coordinate with their battalion fire support elements (FSEs) using voice or digital systems while the brigade FSE participated or assessed the training. In addition, the fire direction centers (FDCs) and tactical operations centers (TOCs) could participate, allowing a comprehensive fires and fire support training event.

To facilitate this concept, a standard Bradley module would, again, be transformed into a BFIST module, using a lower-cost, lower-fidelity version of the

reconfigurable kit. In this case, only the turret of the Bradley would be modified to include an HTU. Then fires could be digitally processed by the observing FIST element and passed to either a live or simulated FSE and (or) TOC. The TOCs and FSEs would operate using real-world command, control, communication, computer and intelligence (C^4I) systems (principally, the advanced Field Artillery tactical data system, or AFATDS) to process fire missions. This would allow the FA battalion to train its entire fire support and fire delivery structure.

Initiative 2: Training at the Combat Training Centers. The three dirt CTCs—Fort Irwin, California; Fort Polk, Louisiana; and Hohenfels, Germany—are recognized as the cornerstones of our collective live training. Training at these sites, coupled with professional observer/controller (O/C) capabilities, have paid great dividends to the readiness of the Army. Unfortunately, the replication of fires and effects at the CTCs is generally inaccurate. As in CCTT, maneuver commanders are walking away from these training environments with the impression that fires are ineffective.

But, there are solutions. One is to revise the software in the simulated area weapons effects/multiple integrated laser engagement system II (SAWE/MILES II) component of the CTC instrumentation system (CTC-IS).

Efforts are underway with the Simulations, Training and Instrumentation Command (STRICOM) to coordinate the development of software fixes that would allow better effects of fires to be replicated at the CTCs and increase the types of munitions available. This initiative impacts several of the battlefield operating systems and, as a result, has a fairly broad base of support.

The CTC-IS software and interface "boxes" located with each vehicle and soldier need to be upgraded to address not only fires replications issues, but also new vehicles coming into the inventory, such as the light or medium armored vehicles (LAVs) or (MAVs) for the Initial Brigade Combat Team (IBCT), and new weapon systems, such as Javelin. The goal is to have the fixes in place to support the rotation of the IBCT at the Joint Readiness Training Center (JRTC) at Fort Polk in December 2001.

Initiative 3: Training With Models and Simulations. Constructive simulations, unlike the virtual CCTT, are conducted on a series of networked computer workstations. These simulations model real-world actions or events and cause friendly, enemy or neutral/faction forces to interact on a computer-generated battlefield.

Because of the expense and environmental considerations associated with large-scale maneuver exercises, the military has turned more extensively to the use of constructive simulations technology to maintain unit readiness and train senior leadership.

As in virtual- and live-training environments, the replication of fires in model simulations is inaccurate and often teaches poor lessons. Current training models, such as the corps battle simulation (CBS), the brigade/battalion battle simulation (BBS) or high-resolution Janus, need their algorithmic underpinnings and effects databases aggressively reviewed and modified to accurately replicate fires and effects and the delivery of fires. This effort is underway at the FA School in coordination with the National Simulation Center (NSC).

Legacy simulations, such as those already mentioned, will be replaced during the next two to 10 years by the next generation of training simulations. Principle among these are the Warfighter Simulation (WARSIM) 2000 and the One Semi-Automated Force (OneSAF). These two simulation programs are expected to span the military operational training environment from the corps, division and brigade levels in WARSIM down to brigade and below operations in OneSAF. Brigade-level training serves as the crossover point for the two.

The FA School is an active participant in both the WARSIM and OneSAF development programs to ensure that errors of the past are not duplicated in the future. Ultimately, the goal is to have the Army deliver a training model that accurately replicates the effects of fires across the full spectrum of battlefield environments and provides artillerymen the training resources necessary to develop and maintain their skills.

WARSIM 2000 is projected to begin initial fielding in late FY01. The system's capabilities will be consistent with the current CBS model. The simulation will be enhanced during the next several years with a full operational capability projected for about FY05. OneSAF also is expected to be delivered about FY05 and fully fielded by FY08.

Initiative 4: Training Digitally. One of the most significant challenges today involves the use of digital technology for communicating, processing, coordinating and, ultimately, delivering fires. This challenge is significant for both the system operator and the battle staff long accustomed to analog systems and grease-pencil charts.

Developing and maintaining digital staff proficiency is a critical skill required by current and future battle staffs. It isn't a skill that's easily trained, and the techniques involved are extremely perishable. As the Army continues its transition to digital battlefield management, we must establish the training environment to support unit proficiency with digital systems.

Two efforts associated with this initiative are underway. The first is to support the National Simulation Center's program for providing the digital battle staff trainer (DBST) to a broad selection of battle simulation centers throughout the Army. DBST has as its heart Fire Simulation (FireSim) XXI.

FireSim XXI is a large-scale, artillery-focused simulation originally developed to support artillery system studies for the combat developments community. It has been adapted to support digitally based training using an artillery unit's organic C^4I and tactical communications systems. Units that have been fielded this system have indicated it provides the most realistic and challenging training environment of any simulation in use today.

The second part of this initiative is to establish a digitally oriented, senior mentor program—a fires senior observer/controller team (SOCT)—to work with and help train active and National Guard artillery brigade-level staffs in digital battle staff operations. This program is similar to the maneuver's SOCT program currently resident at Fort Knox. The use of experienced O/C teams pays tremendous dividends at the CTCs and in Battle Command Training Program (BCTP) exercises and needs to be expanded to home-station training.

Similar to BCTP, the fires SOCT will provide exercise planning, execution and senior mentorship to units. By us-

ing DBST as the core simulation, the SOCT will train on the units' digital equipment at their home stations. The goal is to establish the fires SOCT capability and make it available to units starting in FY01; units will be able to request SOCT support by calling the FA School's Chief of Simulations at the Depth and Simultaneous Attack Battle Lab, Fort Sill, Oklahoma, at commercial (580) 442-3649 or DSN 639-3649.

Other Tools Available. Units can use the various models and simulations available today to create effective training environments for non-maneuver users or for non-traditional missions. Commanders and leaders at every level need to articulate their creative training ideas to their simulation center staffs and push them to support the unit's training goals and objectives. The following are some of the leading models and programs available and their general capabilities.

Battlefield Synchronization and Combined Arms Training. Janus and the joint conflict and tactical simulation (JCATS) are high-resolution training models. This type of simulation replicates vehicles and personnel down to the individual level. The models are extremely effective in supporting battlefield synchronization tasks. They allow the fire supporter and the maneuver commander to synchronize fires with the scheme of maneuver and then execute the plan in real time, addressing critical timing issues.

High-resolution simulations often serve as staff trainers but are primarily used for "combat" training. Line-of-sight is taken into account as the computer "sees" the terrain in three dimensions.

When using the models, the leadership of a platoon or company generally will be in the simulation center looking at the computer screen to see what his forces can see. The models have been used to create effective training environments in support of high- and low-intensity combat operations, disaster relief exercises, noncombatant evacuation operations (NEO) and military operations on urbanized terrain (MOUT).

Command and Staff Training. Command and staff training models, such as CBS or BBS, normally involve the training audience's being located at a field site and interacting with a response cell at the simulation center. The response cell replicates multiple subordinate elements and interfaces with the computer system to execute the orders received from the field.

As the orders are executed, battlefield outcomes are generated and given to the response cell, which, in turn, provides the battle staffs tactical and logistic information to drive the decision-making process.

BCTP is probably the foremost program of this type, although each corps and division has a significant simulation center capability to support unit training and mission rehearsals.

Digital Battle Staff Training. FireSim XXI is a superb system for providing digital staff training. FireSim models target acquisition and counterfire radars, communications, fire mission processing and the firing of friendly and enemy artillery and mortars down to the individual system level.

In a simulated event, a counterfire radar acquisition occurs and the appropriate displays appear to the radar operator who actions the acquisition and forwards an appropriate tactical message to the FDC or counterfire production cell. Once received, the fire mission is processed and passed to a firing element where it is executed.

The simulation monitors all of these events and, as appropriate, assesses attrition. If any particular node (radar, FDC, etc.) is not participating in the exercise, FireSim replicates its actions and generates the appropriate message traffic as would normally be seen on the unit's tactical C^4I systems.

This powerful training tool can be linked with JCATS or Janus to provide a maneuver fight and allow artillery commanders to exercise not only counterfire capabilities, but also direct support to the close fight.

Finally, the environment can be expanded further to include the extended air defense simulation (EADSIM) that provides an air picture, air defense battle and intelligence feeds to the all-source analysis system-remote workstation (ASAS-RWS). When the entire environment is pulled together, it creates an extremely effective tool for training across the depth of the battlefield.

Conclusion. Inaccurate fires replication in virtual (CCTT), live (CTCs) and constructive (CBS/BBS) training environments have resulted, at least in part, in maneuver commanders losing their appreciation for the value of fires in support of the scheme of maneuver. Further, because these simulations tools are not up to the task, artillerymen have been unable to train effectively at home station. The Field Artillery School is initiating and coordinating fixes to address these training issues.

Simulations are a powerful tool for commanders, staffs and leaders at every level. They are not the answer to all training issues but represent one of the training multipliers available. With creativity and adequate lead times, local battle simulation centers can coordinate, plan and execute robust exercises in support of the training community and help commanders maintain unit readiness and effectiveness.

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Leading the Radar Section in Battle— What "Right" Looks Like

by Chief Warrant Officer Three
Harold A. Thacker, Jr.

Few soldiers will spend a day at the National Training Center (NTC) at Fort Irwin, California, as a radar section leader (Field Artillery Targeting Technician Warrant Officer 131A). Yet, understanding the role and responsibilities of the radar section leader is key to the success of every brigade combat team (BCT). The AN/TPQ-36 radar section provides the brigade unique force protection as well as valuable intelligence on enemy mortars and artillery and the locations of high-volume indirect fire.

This article examines the duties and responsibilities of a radar section leader as he prepares his radar section for and leads his soldiers in the NTC battle. If he trains to his duties and responsibilities *right*, he and his section will be prepared to conduct operations in combat.

D-2, 1600. The brigade briefs subordinate units on an operations order (OPORD) for a movement-to-contact. The direct support (DS) FA battalion assistant S3 takes a copy of the brigade OPORD to the DS battalion tactical operations center (TOC) to begin mission analysis.

At the TOC, battle staffs from the DS battalion and the reinforcing battalion gather to jointly conduct mission analysis as part of the military decision-making process (MDMP). The radar section leader and the general support (GS) FA battalion targeting officer begin reading the OPORD. The radar section leader focuses on the information listed in Step 1 "Analyzes the mission..." of the figure.

The radar section leader notices the OPORD contains no information on an electronic warfare (EW) threat. He coordinates with the S2 and submits a request for information (RFI) to the brigade S2: "What is the ground-based EW threat in theater?"

The section leader reads through the OPORD concept of the operation and subordinate unit tasks for the scheme of maneuver. He focuses on what force protection assets are dedicated to the radar section—Bradley team, military police (MP) squad, infantry squad or engineer survivability assets. If no protection assets are identified in the OPORD, the radar section leader discusses the protection assets with the S3, who adds them to the RFIs for the brigade S3.

Finally, the radar section leader looks through Annex D of the fire support plan to find the radar position areas and radar zone list. He determines the information developed by the brigade targeting officer (another 131A) during the MDMP, as listed in Step 1 of the figure.

As he completes the mission analysis, the radar section leader considers the implied and specified tasks he must accomplish for the mission. For this mission, his specified tasks are to acquire the enemy regimental artillery group (RAG) and opposing force (OPFOR) mortars. His implied tasks are to coordinate the link-up time and location for force protection and engineer assets and coordinate with adjacent units for force protection and support once the radar section occupies its position.

The radar section leader attends the mission analysis briefing to the commander and copies down any guidance specifically for the radar. He then issues a warning order (WARNO) to his section, covering the information listed in Step 2 "Issues a WARNO..." of the figure.

Next, he participates in course-of-action (COA) development, confirming the information listed in Step 3 of the figure. For each action/counteraction of the COA during wargaming, the radar section leader states the information listed in Step 4 of the figure.

The radar section leader then returns to his section and issues a second WARNO to update the section on the outcome of the wargame.

D-1, 0600. After a few hours of sleep and a quick breakfast, the radar section leader attends the FA support plan (FASP) briefing with the battery commanders. The GS FA battalion targeting officer briefs the radar deployment order (RDO). The section leader confirms his understanding of the plan and the integration of his radar section into the schemes of maneuver and fires. He then back-briefs the DS or reinforcing battalion S3 on the key tasks and movement of his section.

D-1, 0800. The radar section leader attends the battalion after-action review (AAR) for the previous battle. He notes key issues with radar zone refinement and fixes call-for-fire zone (CFFZ) refinement for the next battle.

After the AAR, the radar section chief briefs his soldiers on the upcoming mission using the five paragraph OPORD format, including the information listed in Step 8 of the figure. He and the radar section chief begin inspecting the critical pre-combat checks (PCCs) to be accomplished before the brigade crosses the line-of-departure (LD).

He then reconnoiters future radar positions to evaluate their technical and tactical suitability for the mission and confirm routes. The radar section chief returns to the DS TOC and updates the S2 and GS battalion targeting officer on the friendly and enemy situations.

D-1, 1600. During the battalion rock drill, the radar section leader indicates the information listed in Step 11 of the figure.

D-1, 1800. The radar section leader briefs his crew on any changes from the rock drill. He then prepares his battle board, including the updated information listed in Step 12 of the figure. The battery first sergeant (1SG) arrives, and the section leader coordinates for logistics, including the areas in Step 13 of the figure. The radar section leader eats,

rests and prepares his section to move to collocate with C Battery short of the LD.

While he's eating, the force protection arrives at the radar location—two MP teams. The radar section leader briefs them on the overall situation and gets information from the teams, as indicated in Step 14 of the figure.

D-1, 1900. The radar section moves out and collocates with C Battery. During the movement, the TOC informs the radar section leader the route has changed. The changes are plotted on the map and the appropriate waypoints are entered into the global positioning system (GPS).

While moving through a wire obstacle from a previous battle, the senior radar operator calls to tell the section leader the cargo trailer has gotten wire wrapped around the wheel and axle. The convoy stops, and the MPs provide area security. The radar section leader goes to the disabled vehicle, assesses the situation and notifies the TOC the section will be late in closing on C Battery's location. While the section leader contacts the TOC, the radar section chief directs the removal of the concertina wire from the disabled vehicle.

An hour later, the radar section leader briefs his soldiers on the dangers of night movement and battlefield obstacles. The soldiers mount-up and resume movement, finally arriving at C Battery and emplacing the radar.

The section then conducts a counterfire battle drill rehearsal with the reinforcing battalion in preparation for the up-

1. Analyzes the mission, by...
—Examining the Brigade Operations Order (OPORD) for the:
- Enemy Electronic Warfare (EW)
- Enemy Indirect Fire Systems
- Enemy's Most Likely Avenue of Approach (Ground and Air)
- Force Protection Assets for the Radar Section
- Radar Position Areas
- Radar Zone Numbers, Types and Grids (Annex D)
- Zone Activation/Deactivation Triggers (Annex D)

- Determining the implied and specified radar section tasks.
- Attending the Commander's Mission Analysis Briefing, looking for specific guidance for his section.

2. Issues a warning order (WARNO) to the section, including the...
- Proposed Primary and Alternate Radar Positions
- Search Azimuths
- Pre-Combat Checks (PCCs)
- Pre-Combat Inspections (PCIs)
- Time Line for Key Events

3. Participates in Course-of-Action (COA) Development, confirming...
- Primary and Alternate Radar Positions
- Search Azimuth
- Cueing Schedule
- Radar Zones
- Use of Force Protection Assets

4. Participates in Wargaming and, during each action/counteraction, states his section's...
- Position
- Search Azimuth
- Cueing Schedule
- Active Zones
- Need for Casualty Evacuation (CASEVAC) Assistance and Other Support

5. Issues second WARNO to the section, updating the information in the first WARNO, COA development and the wargame.

6. Attends the FA support plan (FASP) briefing and confirms his understanding of the radar deployment order (RDO).

7. Back-briefs the direct support (DS) battalion S3 on key tasks and section movement.

8. Briefs his section using the OPORD format, including...
- Map with Current Graphics
- FASP
- RDO
- Operations Overlay

9. Conducts inspections on mission PCCs with the section chief.

10. Reconnoiters radar positions and routes; back-briefs the S2 and general support (GS) targeting officer on the friendly and enemy situations.

11. Participates in the FA battalion rock drill, indicating for each phase of the plan the...
- Radar Location
- Search Azimuth
- Active Zones
- Cueing Schedule
- Acquisition Flow
- Support Requirements at Critical Events

12. Briefs his section on changes and prepares his battle board, including updated...
- Zones Plotted
- Graphics
- Routes
- Ambulance Exchange Points
- Radar Sites

13. Coordinates with the first sergeant for...
- Logistics, Personnel and Administration Center (LOGPAC) Requirements
- Rations and Fuel
- Preventive Maintenance Checks and Services (PMCS)

14. Briefs the force protection assets on the...
- Primary and Alternate Positions and Routes
- Friendly Scheme of Maneuver
- Enemy Situation
- Need to provide roving security from the front to the rear of the radar convoy and radar sites.
- Requirement for a list of the protection asset's personnel, support requirements and sensitive items.

15. Convoys to the battery short of the line-of-departure (LD) and...
- Establishes communications and conducts digital commo checks from sensor to shooter.
- Conducts a counterfire battle drill rehearsal with the reinforcing battalion.
- Conducts section stand-to, checks sensitive items and performs final PCIs and PCCs.
- March orders to the LD and conducts the final safety briefing.

Radar Section Leader's Steps in Planning and Preparing to Execute His Mission

Sergeant Delgado, senior radar operator for 3d Battalion, 29th Field Artillery, 4th Infantry Division (Mechanized), inputs a critical friendly zone.

coming battle. The rehearsal ensures there are no technical errors and digital communications work from sensor to shooter. The radar section leader then can be confident that his communications work and that everyone understands the radar zone and refinement plan.

Next, the section follows its sleep plan for 24-hour operations, sleeping in shifts. The radar section leader and chief monitor the fire support FM rehearsal at D-1, 2100.

D-Day, 0400. The radar section leader and crew conduct stand-to, check sensitive items and perform final PCCs and pre-combat inspections (PCIs) and march order the radar system to the LD. The radar section leader then conducts a safety briefing. The soldiers mount their vehicles and are ready to roll.

D-Day, 0600. The radar section moves to the first radar position in the vicinity of the Matterhorn. The key task is to locate the RAG and OPFOR mortars. The GS battalion targeting officer, with the S3's approval, has coordinated with the division artillery (Div Arty) for AN/TPQ-37 radar coverage during the move, including one critical friendly zone (CFZ) over Brown Pass.

D-Day, 0635. The section leader directs the emplacement of the generator truck and radar trailer on the reverse slope of an intervisibility line to give some cover and concealment from direct fire and observation. He directs the shelter truck, cargo trailer, recon truck and generator trailer to emplace to the rear of the site using a waddi system for cover.

He then checks the radios in the reconnaissance truck to be sure he can monitor the Div Arty counterfire, FA battalion command and brigade operations and intelligence (O&I) nets to track the battle. He checks the initialization data, cueing schedule and zones to ensure the radar system is ready to observe, and he begins battle tracking friendly and OPFOR movements, current zones and acquisitions.

Maneuver forces move past his location, and B Battery occupies a position close to the radar site as the lead task force approaches Brown Pass. As B Battery fires its missions and begins a survivability move, OPFOR artillery from the RAG fires. Rounds land 800 meters from the radar site. As 54 rounds impact, the radar section goes into mission-oriented protective posture (MOPP) Level 4 following its indirect fire drill. Unfortunately, the RAG fires destroy three MP vehicles and wound four of the nine MPs. The radar section leader begins coordinating for casualty evacuation (CASEVAC) for the wounded soldiers while the section members administer buddy aid.

Unknown to the radar section leader, an OPFOR division reconnaissance team initiated the mission, hoping to destroy the radar, a high-payoff target (HTP). The section leader calls the TOC with a SALUTE (size, activity, location, unit, time and equipment) report and nuclear, biological, chemical (NBC) 1 report.

Suspecting the section is under enemy observation, the section leader requests the section be allowed to make a survivability move. Minutes later, he receives guidance from the TOC to move to the alternate location. Ten minutes later, the radar section pulls into the alternate location 1,000 meters away.

As the section chief scans the hilltop for division and regimental reconnaissance teams, he spots five OPFOR soldiers overlooking the radar site. The section chief notifies the radar section leader of the OPFOR soldiers and sends a SALUTE report to the TOC.

The radar section leader again requests permission to move farther northeast. Approval is granted, and the radar section moves again. The TOC advises the Div Arty of the contact reports from the Q-36, and the battalion receives Q-37 coverage for the move.

D-Day, 0735. The radar system emplaces and is ready to observe OPFOR indirect fires impacting in the BCT's area of operations (AO). The radar receives and processes its first zone violation from a CFFZ and sends it digitally to the TOC. During the next hour, the section processes a steady series of acquisitions and sends them to the TOC. The radar section leader and section chief plot the acquisitions and refine the CFFZ locations, reporting the RAG position to the battalion S2.

Attached to the OPFOR at the NTC, a battery of California Army National Guard M109 howitzers replicates a battery of 2S1s during the battle. The 2S1 battery fires a mission and makes a survivability move. The 2S1 battery commander then notices that firemarkers are in his last position, replicating 12 rockets from the friendly force's reinforcing battalion. With an acquire-to-fire time of six minutes, the friendly counterfire mission is ineffective, and the OPFOR artillery continues to fire into the brigade sector with no loss of combat power.

Using his stopwatch, the radar section leader checks the acquisition processing time in the shelter. With a processing time of 45 seconds, he looks for ways to decrease the time. He directs a change in the radar shelter crew drill, allowing each acquisition to be processed digitally without waiting for acknowledgement from the S2's digital device. The operator follows up on the voice FM net to ensure the S2 section receives the acquisitions.

Again using his stopwatch, the radar section leader finds his battle drill is averaging 15 seconds. He's confident the radar operators understand the new procedure and returns to the recon truck to track the battle.

D-Day, 0800. C Battery occupies a position near the radar site and shoots smoke missions to screen the lead task force's movement. Meeting the surviv-

ability criteria, the guns move to a new location, leaving the radar vulnerable to OPFOR counterfire. The radar section leader expresses concern to the DS TOC and is told to stay in place while the task force moves through Brown and Debnam Passes. This is a critical time, and the radar section needs to provide force protection.

D-Day, 0815. The OPFOR fires a nonpersistent (NP) nerve agent with the radar in the downwind hazard. The M8 chemical alarm sounds, and the radar section again goes into MOPP Level 4. The section continues to process a steady flow of acquisitions from the RAG and OPFOR mortars to the reinforcing TOC. The radar section leader submits the NBC 1 report to the DS TOC and waits for the section chief to report the results from the M256 chemical detection kit.

Fifteen minutes later, the section chief notifies the radar section leader that the area is all clear. The NBC 2 report is given to the TOC, and the TOC grants the section permission to begin unmasking procedures.

Meanwhile, the 2S1 battery from the RAG fires a smoke mission to support movement of its AT-5 battery into an ambush position. Before the battery can make a survivability move, 12 rockets from the reinforcing battalion impact on its position, destroying four 2S1s. With an acquire-to-fire time of two minutes and 30 seconds, the friendly force counterfire team begins the systematic destruction of the RAG.

D-Day, 0840. While monitoring the brigade command net, the radar section leader learns the task force has secured Brown Pass. This is the trigger to move the radar section through the pass and emplace to support the BCT as it makes contact with the enemy. The Div Arty authorizes Q-37 radar coverage for the Q-36 radar's movement, and the battalion targeting officer directs the radar section leader to move.

As the radar section closes to Brown Pass, the section leader encounters an OPFOR family of scatterable mines (FASCAM) minefield. He reports its location to the DS TOC and directs the section chief to move the other two vehicles to a rally point. The radar section leader conducts an area reconnaissance and coordinates with engineers in the pass to use a passage lane; the rest of the radar section then is brought forward. The section elements link up and continue tactical movement to the new position.

The radar section leader tracks the movement-to-contact and hears a spot report that contact has been made five kilometers to the west. As he plots the information on his map and studies the situation, the section chief tells him the radar has been receiving a steady flow of acquisitions, but most had been plotted outside the active CFFZ. After plotting the hostile weapons locations, he directs the section chief to have the radar operator delete the ineffective CFFZ, input a new CFFZ and report the changes to the battalion targeting officer and S2.

D-Day, 1000. From his radar operator at the section's observation post (OP), the radar section leader receives a spot report of suspected OPFOR smoke one to two kilometers east of the section's location. While monitoring the FA battalion command net, the section leader learns that OPFOR elements continue to move westward along the path of the smoke.

He notifies the TOC of the smoke and OPFOR vehicles movement. He does not request to move because adjacent units are providing adequate force protection. The radar section continues to process OPFOR acquisitions from the RAG until the battle culminates at 1145.

D-Day, 1145. The section leader's day continues at the NTC, even though the battle culminates; the radar section receives continue-the-mission (CTM) instructions. At CTM plus one hour, the radar section conducts an AAR with the NTC's radar/targeting trainer at the radar site to assess what happened, why it happened and how to improve for the next fight. During the AAR, the radar section leader brings up radar positioning versus firing battery positioning and the counterfire risk of being too close to firing elements. He agrees to fix radar positioning during the next MDMP.

The radar section chief discusses the hazards of battlefield obstacles and determines wire cutters need to be readily accessible and the section needs battle drills for self-recovery and obstacle bypassing. He will develop the battle drills and rehearse them in preparation for the next battle.

The senior radar operator notes the crew drill was inconsistent and wants to integrate the section leader's changes into the standing operating procedures (SOP). He will write the new SOP and rehearse the new battle drill at the next counterfire rehearsal.

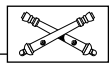
NTC battlefield statistics for the radar section are 40 acquisitions, 21 zone violations and the destruction of 16 2S1s and six mortars. After the AAR, the radar section leader moves the section back to the TOC until it's time to rollout for the next fight.

Conclusion. The battle responsibilities of a radar section leader stretch from the receipt of the brigade OPORD through the end of the battle. The pace of his activities is rapid and relentless. Yet radar section leader is one of the most rewarding positions an FA targeting technician will ever fill.

Battle at the NTC for the radar section leader illustrates the complexity of the section leader's duties and responsibilities. He must be an integral part of the planning process, coordinate with various elements of the combined arms team, make key tactical and technical decisions during the battle and provide candid post-battle assessments.

Like battle at the NTC, home-station training must integrate the radar section leader into the MDMP and rehearsals. The training must exercise the counterfire system, with the section striving to meet a two-minute acquire-to-fire time. Force protection assets and challenging battlefield movement and effects also must be integrated into the training. Finally, no training is complete without an AAR.

If home-station training offers these challenges to radar sections, then units will be well on their way to destroying RAGs at the NTC—as well as on any future battlefields.



Chief Warrant Officer Three Harold A. Thacker, Jr., until recently, was a Combat Radar/Targeting Trainer with the Fire Support Division of the Operations Group at the National Training Center, Fort Irwin, California. He is now a Target Acquisition Instructor in the Targeting Division of the Fire Support and Combined Arms Operations Department of the FA School, Fort Sill, Oklahoma, his second tour in the division. In previous assignments, he served as an FA Intelligence Officer for the 1st Infantry Division (Mechanized) and Brigade Targeting Officer with the 1st Battalion, 6th Field Artillery, 3d Brigade Combat Team, also in the 1st Division in Germany. During Operation Joint Endeavor in Bosnia, he was a Radar Section Leader for B Battery of the 25th Field Artillery (TA), part of the 3d Infantry Division (Mechanized) Artillery in Germany. Among other courses, CW3 Thacker is a graduate of the Targeting Process Course at Fort Sill; the Joint Firepower Control Course at Nellis AFB, Nevada; and the Joint Aerospace Command and Control Course at Hurburt Field, Florida.

Fire Support Training in the CCTT

by Lieutenant Colonel Ernest J. Herold III, Major Mickey A. Sanzotta and Captain Thomas W. Everritt

"Hammer 30, this is COLT [combat observation lasing team] 1. I have 20 armored vehicles moving east, vicinity of Grid NK386174. Time is 0830. Over."

"This is Hammer 30, roger. Out."

"COLT 3, this is COLT 1. The lead element of the 20 victors is headed into the eastern Granite Pass, vicinity of Grid NK399195. Over."

"This is COLT 3, roger." Break. *"Hammer 30, this is COLT 3. Fire KM0015 at-my-command. Over."*

"COLT 3, this is Hammer 30. Message to observer, Steel Battalion, 6 DPICM [dual-purpose improved conventional munitions], KM0015." Break. *"KM0015, ready. Over."*

"Hammer 30, this is COLT 3. Fire KM0015. Over."

"COLT 3, this is Hammer 30. Fire KM0015. Out."

"Hammer 30, this is COLT 3. End of mission: two APCs [armored personnel carriers] burning, two tanks damaged." Break. *"Let Battle 30 know he has 16 armored vehicles moving east toward Phase Line Dan, vicinity Grid NK420212. Time 0905. Over."*

You might think this was a well-executed fire support battle drill at the National Training Center (NTC) at Fort Irwin, California. However, it's a fire support exercise conducted by soldiers of the 1st Battalion, 10th Field Artillery (1-10 FA), part of the 3d Infantry Division (Mechanized), at its close combat tactical trainer (CCTT), Fort Benning, Georgia.

The guard unit armory device, full-crew interactive simulation trainer (GUARDFIST) and the training set fire observation (TSFO) are great devices to train forward observers (FOs) on call-for-fire (CFF) procedures. With a little ingenuity, they can be used to train additional tasks, such as radio procedures and processing digital CFFs. However, GUARDFIST and the TSFO can't be used as a stimulus for many of the fire support tasks required for combined arms operations.

Fire supporters must be able to plan, rehearse and execute an integrated observation plan from a combat vehicle, track the battle, pass combat intelligence between observers and hand the battle over to subsequent observers. To accomplish this type of training, a device must be able to place multiple observers in an environment that realistically simulates their unique point of view from different positions on the battlefield. With a little imagination, the CCTT can be used to accomplish this mission.

This article gives an overview of the CCTT facility, discusses 1-10 FA's design of and workarounds for a task force-level fire support exercise and outlines the lessons learned while planning and executing the exercise.

CCTT Overview. The CCTT was designed to train a company/team-sized unit in combined arms operations. Soldiers conduct operations in combat vehicle simulators equipped with video screens that simulate realistic viewpoints of drivers, vehicle commanders, gunners, observers and dismounted infantry. Mock-ups of M577 command post carriers represent the task force (TF) tactical operations center (TOC), the mortar section, a direct support (DS) Field Artillery battalion fire direction center (FDC), as well as a logistics support center.

The CCTT facility can expand to the TF-level by manning up to 27 combat vehicle simulators and controlling the rest of the task force from semi-automated force (SAF) positions. Therefore, a TF could man almost two companies with combat vehicle simulators and simulate a company with SAF forces. Another scenario would place

company commanders and platoon leaders in combat vehicle simulators in control of SAF troops. The CCTT simulation is very flexible and can arrange many variations of manned simulators and SAF elements.

The CCTT facility has off-the-shelf training support package exercises that can be adapted to meet FA unit training objectives, or the unit can develop its own exercise. Using an existing training exercise significantly decreases planning time but may not meet all the unit's simulation requirements. Developing a unique scenario requires a lot of time, effort and coordination with the facility engineers; however, the end product will be an exercise tailored to the tasks the unit wants to train.

To design an exercise in the CCTT, the unit must produce an operations order (OPORD) with overlays, decide which simulators will be manned and which simulated, determine six-digit grids for all entities (vehicles, fighting positions, dismounted positions, minefields, etc.) and establish radio net structures. The unit also must determine the opposing force (OPFOR) strength, composition, disposition and courses-of-action (COA). Early and continuous coordination with the CCTT facility is critical to ensure the scenario is feasible and meets training objectives.

The major CCTT advantages are that it provides low-cost, excellent training in combined arms operations with manned combat vehicles and the ability to conduct superb after-action reviews (AARs) in an unequaled AAR facility. Time is the only appreciable expense of conducting a CCTT exercise; all other costs are negligible.

Combat simulators are a huge benefit for the M1 Abrams tank, M2 Bradley infantry fighting vehicle and M981 fire support team vehicle (FIST-V) crews. Inside the boxy simulation modules, crews operate controls and talk on vehicle inter-communications systems that replicate the "real McCoy." For example, the single-channel ground and airborne radio system (SINCGARS) mock-ups are so realistic that soldiers have to be stopped from attempting to hook-up digital devices to the faceplates, which appear functional.

As crews peer through sights or opened hatches, they are amazed at the simulated terrain and combat around them. The AAR facility offers top-notch visual and audio playback of the battle, including radio traffic from a macro-view down to the a view from a specific tank gunner's sight.

Another advantage of CCTT is the NTC terrain database. This offers a realistic view of the NTC battlefield, enabling soldiers to gain experience on terrain where the greatest challenges may occur. The NTC terrain also allows FOs to conduct observation training at much greater distances than on a post with heavily vegetated terrain.

CCTT Fire Support TF-Level Exercise. After observing maneuver task forces use the CCTT for training, Fort Benning Redlegs decided to design a multi-echelon training exercise for fire supporters. The training objectives were to exercise the entire fire support system (including the digital system): plan, rehearse and execute an integrated observation plan; perform battle tracking and hand-over; exercise the sensor-to-shooter link; and familiarize the unit with the NTC terrain.

We adapted the capabilities of the CCTT and designed a TF-level exercise capable of training a TF fire support element (FSE), company FISTs, COLTs, as well as the brigade FSE. Our design included the DS battalion FDC and the mortar FDC.

One drawback was that only one FIST-V simulator exists in the facility. To account for the lack of FIST-V simulators, we provided quick instruction on the M1 simulator and placed fire support officers (FSOs) and observers in these vehicles. This allowed each FSO to observe the battlefield with a capable observation, maneuver and communications platform. This option limits the number of radios available to the FSOs; however, it is not a significant training distracter.

The CCTT facility's fire support digital system consists of the advanced Field Artillery tactical data system (AFATDS) in the DS battalion FDC and TF FSE and forward entry device (FED) systems for observers in the FIST-V and both dismounted infantry modules. Our digital system consists of the initial fire support automated system (IFSAS) and hand-held terminal units (HTU). We adapted the CCTT system to ours by wiring our HTUs from the observers in the simulators to the TF FSE, brigade FSE and DS battalion FDC IFSAS. When a CFF was received, the FA battalion FDC processed it in the CCTT AFATDS to generate virtual fires in the simulation that observers see on the ground.

During a future exercise, we plan to remote a SINCGARS radio outside the facility to communicate with the platoon operation centers (POCs) and our 155-mm Paladin howitzers in a local training area. This will account for complete fire mission processing time and further train observers in targeting, triggers and observation planning.

Lessons Learned. We learned many lessons while planning and executing our fire support exercise in the CCTT facility. These include the capabilities and limitations of the facility and future considerations for fire support exercises.

CCTT Capabilities. Face-to-face coaching that was possible in CCTT is impossible on the actual terrain. It would

A CCTT Observer/Controller Station

be great if the FSO or the fire support NCO could stand on the same piece of ground as their FOs to coach them through observation post (OP) selection, target refinement, trigger points, etc. In the CCTT, this is a simple task. Instead of driving 20 kilometers over broken terrain, the trainer only walks a few feet to a simulator.

Engineer support is well simulated in the CCTT. The engineer has his own console where he digs fighting positions and tank ditches, emplaces minefields and wires obstacles, etc. This allows the engineer to work with maneuver commanders and fire supporters to build engagement areas (EAs) that protect the force and integrate obstacles into the commander's concept of the operation.

The CCTT can change direct fire engagement ranges and marksmanship. In our scenario, we reduced the direct fire engagement ranges for the Blue Forces and OPFOR to two kilometers, which compensated for the four-kilometer visual range in the CCTT. This allowed observers to refine targets and determine trigger points to affect the battle with indirect fires before the OPFOR entered direct fire range.

We also had to adjust the marksmanship level for simulated forces. During testing of the simulation, we discovered OPFOR simulated combat systems would overpower a numerically superior simulated Blue Force for no reason. We were able to adjust the marksmanship proficiency of both forces "to level the playing field" and meet our training objectives.

One of the greatest capabilities of the CCTT is its staff. While planning and executing the exercise, the CCTT personnel quickly responded by creating workarounds to enhance our training. During planning, the staff found a way to use the dismounted platoon simulator for the COLT to give us all the capabilities of the module while creating a visual signature of only two soldiers. During execution, the CCTT staff promptly converged on challenges to solve problems and create workarounds. When a solution couldn't be found, they immediately informed us of the problem and generated reports to their higher headquarters to solve the problem for future operations.

CCTT Limitations. There are many limitations in CCTT because it was designed for training close combat with M1s and M2s, not fire support. The key is for units to be aware of the limitations and develop techniques to achieve their training objectives.

The visual limit in a CCTT simulator is four kilometers. There are several workarounds for this problem. In most instances, we either placed observers within the four kilometer range of what they needed to see or adjusted direct fire engagement ranges so observers could accomplish essential fire support tasks (EFSTs) before OPFOR vehicles entered direct fire range.

We also were able to adjust the OPFOR's rate-of-march and interval between forces. By slowing the rate-of-march, we allowed the OPFOR to spend more time in the EA. In addition, by decreasing the interval between forces we still stressed the need for quick and accurate indirect fires in support of the maneuver forces.

Because simulators aren't supplied with global positioning systems (GPS), track commanders and observers must use land navigation skills to determine their location and be able to maneuver in the simulation. We helped observers refine their location by finding their position on the CCTT computers, which are in various locations in the facility.

Because the CCTT only has one FIST-V, we wanted to place two company FISTs in Bradleys to conduct fire support operations and familiarize our FISTs with their future vehicle. However, we discovered the CCTT Bradley simulator wasn't equipped with a targeting system. Therefore, we opted to use M1s because of their laser rangefinder capability.

While SINCGARS mock-ups are nearly identical to their real-world cousins, they only operate in single-channel, plain text mode. Operators aren't able to load radios and establish frequency-hop communication or wrestle through communications problems associated with frequency-hop operations.

However, the CCTT simulation does play radio maximum range and terrain interferes with communications. While this feature forces you to work out a plan to keep radio platforms within range, the system doesn't provide retransmission capability. We overcame this obstacle by placing key vehicles, such as the TF FSE and DS battalion FDC, in positions where a re-transmission vehicle normally would have gone.

The maximum range for 155-mm artillery is 17 kilometers. This is not a serious limitation for most of the operations but must be accounted for during the planning phase. Also, the unit basic load (UBL) only has four rounds of DPICM on the gun and ammo carrier. The CCTT simulation fires ammo off the gun and ammo carrier until the round type is exhausted and then places the gun out of action for 30 minutes as it conducts re-supply operations. Adjusting the UBL to meet mission requirements during the planning phase will alleviate this situation.

Another CCTT problem is that the simulation will lock-up if there's too much activity. Every entity (vehicle, minefield, bullet, building, etc.) in the simulation uses computer memory. When entities are moving around and shooting at each other, memory usage jumps considerably.

During the planning phase, we ran the simulation to ensure we were able to move forces and conduct attacks in accordance with doctrine, standing operating procedures (SOPs) and our specific plans. We discovered we could replicate some entities with less memory with no difference in visual effect to the soldier in a simulation module.

For instance, we knew from a previous exercise that the large amount of memory required for scatterable minefields helped lead to the simulation failure. We reduced the amount of memory used in our exercise by using conventional minefields with a lane through them in place of a scatterable minefield.

During the simulation, we told the OPFOR commander to drive his reconnaissance through the lane in the minefield. Arrival of the reconnaissance element triggered a call from an FO to emplace a family of scatterable mines (FASCAM) minefield. We fired the grid with DPICM rounds that the observer in the simulator thought was scatterable mines. When the OPFOR commander sent in his main body formation, we instructed him to run into the preplanned conventional minefield. By using this technique, we provided quality visual effects for observer training and ensured the simulation ran continuously during the entire exercise.

CCTT isn't a perfect system. For example, going back and forth between regular view and binocular view on the FO console of the dismounted station crashed the module. Once we identified the problem, the facility engineers got the module up and running again in less than five minutes.

While the CCTT was not developed specifically as a fire support trainer, it can be adapted to provide inexpensive, quality training for fire supporters. We found that the CCTT dramatically improved our ability to provide fires in support of combined arms operations and identified tasks needing additional training.

With a little imagination, any FA unit can use its CCTT to gain similar results.

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Major Mickey A. Sanzotta is the Executive Officer of 1-10 FA. In his previous assignment, he was FSO for the 3d Brigade, 3d Infantry at Fort Benning. He also served as the Assistant Brigade S3 for the 3d Brigade, 24th Infantry Division (Mechanized), Fort Stewart, Georgia, and Commander of Service Battery, 4th Battalion, 41st Field Artillery, 3d Division at Fort Benning. He was a Company FSO for the 1st Battalion, 39th Infantry and 2d Battalion, 68th Armor in the 8th Infantry Division (Mechanized) in Germany. Major Sanzotta holds a Master of Science in Mathematics from the Naval Post-Graduate School in Monterey, California.

Captain Thomas W. Everritt is the Task Force Fire Support Officer for 2d Battalion, 69th Armor, 3d Division at Fort Benning. Previous assignments include serving as Commander of the 2d Field Artillery Detachment (Target Acquisition), part of the XVIII Airborne Corps, and Fire Support Officer for C Company, 1st Battalion, 327th Infantry of the 101st Airborne Division (Air Assault), both located at Fort Campbell, Kentucky.

HONOR
Strict Conformity to What's Right

The Army has seven values by which her soldiers strive to live: Loyalty, Duty, Respect, Selfless Service, Honor, Integrity and Personal Courage. This brief piece features Medal of Honor (MOH) winner George P. Hays, who, as a first lieutenant with the 10th Field Artillery, 3d Infantry Division, distinguished himself near Greves Farm in France on 14-15 July 1918 during a German attack. The actions of George Hays epitomize the Army value of Honor.

Lieutenant Hays, while wounded and operating under most difficult circumstances, did what was right. As a runner, he reestablished lines of communication after his commo equipment was destroyed at the beginning of a massive two-day German artillery barrage. He continuously moved back and forth on horseback, responsible for effective fire from his position, and rallied two French batteries, directing their fire. He played a major role in stopping the last German offensive of World War I.

MOH Citation: George Price Hays, Number 34, 1919. "At the very outset of the unprecedented artillery bombardment by the enemy, his line of communications was destroyed beyond repair. Despite the hazard attached to the mission of runner, he immediately set out to establish contact with the neighboring post of command and further establish liaison with two French batteries, visiting their position so frequently that he was mainly responsible for the accurate fire therefrom. While thus engaged, seven horses were shot under him and he was severely wounded. His activity under most severe fire was an important factor in checking the advancing enemy."

Hays, The Man. George P. Hays was born 27 September 1892 in China. He entered service in Okarche, Oklahoma, in 1917 as a Second Lieutenant, Field Artillery in the Officer Reserve Corps. He came into the Army at a time of great significance and change for the Field Artillery. World War I was the first large-scale use of indirect fire with the corresponding rise of the role of the forward observer.

After World War I, he received his Bachelor of Science from Oklahoma A&M in 1920. He attended the Battery Officers School in 1922, the Command and General Staff College in 1934 and the Army War College in 1940.

Then in 1940-1941, he commanded the 99th Field Artillery (Pack) with Captain William O. Darby as one of his battery commanders. Darby later was the organizer and leader of the World War II Darby's Rangers and noted for his innovative use of the 4.2-inch mortar. He credited Hays with teaching him much about the aggressive use of indirect fire.

Hays went on to command the 10th Mountain Division in Italy during World War II. He also commanded the US Forces in Austria in 1946 and then the Sixth US Army, 1946-1947. Later, he served as the US Representative to the Allied Military Government Coordinating Committee.

In 1953, Lieutenant General George P. Hays retired from the Army. He died in September 1979. His other decorations include the Distinguished Service Medal, Silver Star with Oak Leaf Cluster, Legion of Merit, Bronze Star and Purple Heart.

(Editor: Information for this article was taken from the "American Artillery and the Medal of Honor," Military History Monograph 49, by Field Artilleryman David T. Zabecki, USAR.)