Maneuver Support *Magazine*

Summer 2008

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PURPOSE: This publication presents information designed to keep maneuver support personnel informed of current and emerging developments within the field and provides an open forum in which ideas; concepts; tactics, techniques, and procedures; historical perspectives; and problems and solutions can be exchanged and discussed for purposes of enhancing professional development. However, all information contained in the submissions must be unclassified, nonsensitive, and releasable to the public.

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Maneuver Support Center

Maneuver Support Magazine

Volume 1, No. 1 Summer 2008

UNITED STATES ARMY MANEUVER SUPPORT CENTER

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Back Cover: A Soldier from the 186th Military Police Company, Iowa Army National Guard, provides security during military operations on urban terrain as part of mobilization training. (U.S. Army photo by Staff Sergeant Russell Lee Klika)

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From the Commanding General

By Major General William H. McCoy
United States Army Maneuver Support Center

The United States Army Maneuver Support Center of Excellence at Fort Leonard Wood, Missouri, trains a fighting force that is ready and able to win decisively in meeting the challenging needs of today's current operating environment. The Maneuver Support Center (MANSCEN) focus is on ensuring that we have equipped our forces and developed our leaders to assure the mobility and protection of the forces they support. In anticipating continued, dynamic change, MANSCEN dedicates considerable effort to identifying and developing the capability requirements needed to mitigate a host of future threats.

Welcome to the first issue of the *Maneuver Support Magazine,* a bi-annual publication that provides a forum for exchanging information and ideas within the maneuver support community and among our many "stakeholders." The magazine will keep you informed on the latest maneuver support training and capabilities available today. It will reflect the evolving world of training, support to our warfighters, and transformation, which will ultimately make our Army's maneuver support capabilities world-class. Integrating our multifunctional capabilities, and executing modularity with coordination and precision, support the maneuver commander's freedom of action across the continuum of operations for the current and future operating environment. By presenting professional development opportunities in this publication, we increase our knowledge and improve our effectiveness.

MANSCEN is leading the organizational and leader development for the maneuver enhancement brigade (MEB) and its leaders; we are ensuring its effective integration into the total force. Currently, there are twenty-three brigades planned among our three components (Active Army, United States Army Reserve, and Army National Guard). The activation and integration of MEBs constitutes a significant milestone in total Army transformation; it represents a paradigm shift from the past to the future for maneuver support integration.

We've assembled an experienced pool of writers to bring you thoroughly researched articles and the latest information on maneuver support. The result, we hope, will stimulate, inform, and provoke intellectual discussion to help clarify and better understand maneuver support, the MEB, and its role in conducting full spectrum operations.

The MEB is multifunctional in its construct; it leverages emerging modular principles and supports the "plug-and-play" concept in retaining an overall expeditionary posture predicated on an ability to command and control disparate units to achieve the desired effect in time and space in support of the maneuver commander's objective.

The MEB is organized, trained, and equipped, and is ideal for employment to conduct maneuver support operations, support area operations, consequence management operations, and stability operations. Flexible and tailorable to support all aspects of full spectrum operations, the MEB may be composed of engineer, chemical, military police, air defense, civil affairs, explosive ordnance disposal, and other units harnessing wide-ranging expertise and skill sets that enable them to function together and achieve a unity of effort.

In the *Maneuver Support Magazine*, we plan to present ideas for leaders that extend beyond their typical boundaries. We will offer you timely important subjects and provide you with compelling—and useful—information. We will include articles on a variety of capabilities, tasks, and processes that are especially associated with protection, movement, and mobility—pillars of maneuver support. Authors may discuss training, current operations and exercises, doctrine, equipment, history, personal viewpoints, or other areas of general interest to maneuver support personnel. Articles may also share good ideas and lessons learned or explore better ways of conducting business.

Your readership and continued interest in our magazine and the work that we do is appreciated. Please feel free to make comments and suggestions or to submit articles and ideas you think we should pursue to <*leon.msmagazine@conus.army.mil*>.

World-Class in All We Do
TRAIN, SUPPORT, TRANSFORM, CARE, ENGAGE

From the Command Sergeant Major

By Command Sergeant Major Michael D. Hayes
United States Army Maneuver Support Center

It is indeed an honor to be a part of this exciting time at Fort Leonard Wood as we launch the *Maneuver Support Magazine*, a publication that will serve our military well. Senior leaders and subject matter experts will have an opportunity to present their knowledge and experience in a publication that is focused on the Army's Future Force.

Leadership isn't about what you know, it's about what you do. What we as leaders must now do is shape our vision on transformation and provide our support to this publication which will give maneuver support Soldiers an in-depth look at those changes, ensuring that our forces are equipped with the most advanced equipment, technology, and training the Army has to offer.

By presenting ideas in an educational forum, we can ensure that maneuver support is understood so that the right people are in the right jobs, at the right time, to obtain the best possible outcome. Articles featured in the *Maneuver Support Magazine* will serve as an extension of the senior noncommissioned officer's (NCO's) ability to coach, teach, train, and mentor Servicemembers across all specialties and branches.

Fort Leonard Wood is the lead in supporting deployed units, including the 94th Engineer Battalion, the 5th Engineer Battalion, the 463d Military Police Company, the 252d Military Police Detachment, and the 763d Explosive Ordnance Disposal Company. Every deployed component has reachback capability to help them fight in the current operating environment that is ever-changing.

To help in that support, we're activating the 4th Maneuver Enhancement Brigade (MEB) in October 2008 and will stand up the 92d Military Police Battalion and three military police companies between now and FY11. These additions will enhance our mission by providing the needed support in the battlefield.

This magazine will allow a forum for discovery, discussion, and the presentation of innovative ideas that will allow our military and civilian force to synchronize leader development across our three schools— the United States Army Chemical, Biological, Radiological, and Nuclear School; the United States Army Engineer School; and the United States Army Military Police School.

General Henry H. Shelton, former Chairman of the Joint Chiefs of Staff, said, *"The nature of modern warfare demands that we fight as a joint team. That concept is based on joint doctrine and its associated tactics, techniques, and procedures. It provides a common framework and approach to warfighting from which game plans can be developed – and successfully executed through the universal practice of joint doctrine."*

It is our vision that this publication will provide joint and combined education, training, and operations—plus national security articles—for use by military, civilian, and interagency decision makers and their staffs. It will emphasize maneuver support and serve as the flagship publication for the United States Army Maneuver Support Center at Fort Leonard Wood.

We ask that you support this endeavor by providing honest input on the publication and ways in which you would like to see it grow. Serving in the armed forces is the greatest contribution one can make to this great nation. Teaching others is a legacy that will live on through the pages of the *Maneuver Support Magazine*.

It is my deepest desire that this publication will serve the military force well and be an informative guide to help you be "World-Class in All We Do." Together, we will create a publication that is an ongoing and comprehensive approach to developing, maintaining, and updating maneuver support for America's sons and daughters—with the ultimate goal of bringing everyone home safely.

May God continue to bless you, our Soldiers, and their Families, as well as all of our Servicemembers.

"The nature of modern warfare demands that we fight as a joint team..."
— General Henry H. Shelton, former Chairman of the Joint Chiefs of Staff

World-Class in All We Do
TRAIN, SUPPORT, TRANSFORM, CARE, ENGAGE

History of Fort Leonard Wood

By Dr. Larry Roberts

The history of Fort Leonard Wood dates back to the dark days just before World War II. By 1940, war had engulfed Europe and much of Asia. The United States was slowly and painfully struggling to put its military house in order. By then, many Americans believed that it was only a matter of time before the country would be drawn into what was rapidly becoming a global conflict.

The nation's leaders worked to increase the size of the armed forces, procure modern equipment, and merge the two into an effective fighting force. One of the major challenges was finding suitable training areas for the expanding Army. In 1940, the War Department decided to establish a major training facility in the Seventh Corps area. This command comprised most of the states of the central plains. Originally located near Leon, Iowa, the site for the new training center was moved to south-central Missouri.

On 3 December 1940, military and state officials broke ground for what was known as the Seventh Corps Area Training Center. In early January 1941, the War Department designated the installation as Fort Leonard Wood.

General Leonard Wood

The post is named for Major General Leonard Wood, a distinguished American Soldier whose service to his country spanned 40 years. A warrior and a surgeon, Wood graduated from Harvard University and began his military service as a contract surgeon during the Apache Indian Wars in the 1880s, winning the Congressional Medal of Honor for valor.

At the outbreak of the Spanish-American War, Wood commanded the 1st U.S. Volunteer Cavalry, better known as the Rough Riders. His second in command, Theodore Roosevelt, took over the regiment when Wood was promoted. Roosevelt earned fame for leading the Rough Riders in the charge on San Juan Hill.

Wood served as the Army's Chief of Staff from 1910 to 1914. His last position of service was as Governor General of the Philippine Islands, which Spain had ceded to the United States after the Spanish-American War. Wood held this position until his death in 1927.

Major General Leonard Wood

Soldiers build a bridge to the Fort Leonard Wood golf course – 1 February 1957

Building the Fort

Building a major training center in the rugged terrain of the Ozarks presented a formidable challenge. The nearest rail service was several miles away. There was no housing for the thousands of workers who would build the post. Fort Leonard Wood had to be built quickly, since the first troops were scheduled to arrive in only a matter of weeks after the initial groundbreaking. First to train at Fort Leonard Wood were elements of the 6th Infantry Division.

Inclement weather complicated construction; bulldozers often were needed to drag lumber trucks through the mud. But through sheer determination and hard work, construction crews completed their task by June 1941. They had built nearly 1,600 buildings, comprising more than five million square feet of floor space, at a cost of $37 million—and had done the job in six months.

Original Training Mission

Fort Leonard Wood was to be the home of the 6th Infantry Division. In time, four other infantry divisions—the 8th, the 70th, the 75th, and the 97th—trained at the installation. In addition, a number of nondivisional units, ranging from field artillery battalions to quartermaster companies, also trained on the post. During World War II, more than 300,000 Soldiers passed through Fort Leonard Wood on their way to service in every theater of operation.

While the post was initially designated as an infantry division training area, Fort Leonard Wood quickly took on an engineer training mission. In March 1941, the first elements of an Engineer Replacement Training Center arrived in south-central Missouri. The growing size of the engineer force and limited training facilities at Fort Belvoir, Virginia, prompted the Chief of Engineers to look for additional training locations. Initially, engineer training focused on the training of individual replacements for established units. Soldiers went through a program that included both basic and engineer Soldier skills. The training schedule varied from 8 to 14 weeks, depending on the need for engineer replacements. In time, engineer units were formed on the post and completed their training prior to movement overseas.

Post-World War II

With the end of the war in 1945, training declined at Fort Leonard Wood and ceased completely in the spring of 1946. The War Department placed the post on the inactive list. Between 1946 and 1950, a small caretaker unit maintained some of the facilities, which were used for summer training by National Guard units. Much of the reservation was leased to an Oklahoma rancher who used the area for grazing cattle.

Korean War

In June 1950, North Korea invaded South Korea. The United States, as a major part of the United Nations mission, went into action to halt and turn back the North Korean aggression. The Department of the Army once again needed training areas. On 1 August 1950, the Army announced that Fort Leonard Wood was to be

reopened to provide basic and engineer training for Soldiers destined for Korea.

The Army reactivated the 6th Armored Division and gave the division the training mission as the cadre unit. The commander of the 6th Armored Division was Major General Samuel Sturgis, a distinguished engineer who had served under General Douglas MacArthur in the Pacific during World War II. Sturgis would ultimately become the Chief of Engineers.

Cold War

When hostilities ended in Korea, there was some concern over the fate of the post. However, the military demands of the Cold War and aggressive efforts by local community leaders led to a decision by the Army to make Fort Leonard Wood a permanent installation.

In 1956, the installation was designated the United States Army Training Center-Engineer. Because of its new status as a permanent post, Fort Leonard Wood received substantial funds to replace the wooden construction of World War II-era buildings with permanent brick structures. Construction included major troop barracks complexes, hundreds of military family units, and support and recreational facilities. The construction of the 1950s and 1960s enabled the post to handle the significant increase in training workload brought on by the war in Vietnam.

Vietnam

In 1967, the post trained more than 120,000 Soldiers. Not all of this training involved either basic or engineer training. Skill training included such specialties as clerks, cooks, bakers, wiremen, mechanics, and motor vehicle operators.

With the reduction of the Army following the Vietnam War, the overall number of Soldiers training at the post declined. However, the composition of Soldiers arriving for engineer training changed in the 1970s and early 1980s. By the mid-1970s, the United States Air Force and United States Marine Corps began training their construction equipment operators at Fort Leonard Wood. The post also began providing engineer training to other nations. In 1982, the 4th Training Brigade was training engineers from 15 foreign countries.

Engineer School

In 1985, Fort Leonard Wood entered yet another phase in its history. That year, the Secretary of the Army announced that the United States Army Engineer School would move from Fort Belvoir, Virginia, to Fort Leonard Wood. For years, the Engineer School had suffered a lack of space for training. Actually, the Army had looked at moving the Engineer School in the mid-1970s, but was unable to get the plan approved for nearly ten years. The Engineer School completed its move in 1989, occupying a new $60 million state-of-the-art training and education facility. For the first time in nearly 50 years, all engineer training—including officers, warrant officers, noncommissioned officers, and enlisted personnel—would take place at the same location. The growth of the post brought even more construction, with new commissary, fitness, and training facilities.

Post-Cold War

The end of the Cold War did not result in a decline in activity at the post. The invasion of Kuwait by Iraq prompted a significant military response by the United States and its allies. Fort Leonard Wood units were deployed to Southwest Asia for Operations Desert Shield and Desert Storm.

In addition, the installation processed more than 4,000 Reserve Component Soldiers mobilized in response to the Iraqi invasion. This included 16 United States Army Reserve and 9 Army National Guard units. Fort Leonard Wood also provided personnel and technical expertise to contingency and humanitarian operations in Somalia, Haiti, and Bosnia. Post-Cold War training also included instruction in engineer construction techniques for Navy, Air Force, and Marine Corps personnel stationed at Fort Leonard Wood.

Military Police and Chemical Schools

As a result of the 1995 Base Realignment and Closure decision to close Fort McClellan, Alabama, the United States Army Military Police School and United States Army Chemical School (recently renamed the Chemical, Biological, Radiological and Nuclear [CBRN] School) were directed to relocate to Fort Leonard Wood. In preparation for their relocation, a three-story general instruction facility was built that connected to the existing Engineer School building and contained state-of-the-art technology, support facilities, and administrative offices for both schools. Additional construction to support the Military Police and Chemical Schools included an addition to the existing Engineer Museum as well as specialized training facilities. In 1999, the Military Police and Chemical Schools joined the Engineer School to form the Maneuver Support Center of Excellence.

War on Terrorism

With the attack on the United States on 11 September 2001, the nation entered into a struggle against global terrorism. Fort Leonard Wood has intensified its efforts to defeat this new threat. This includes revising doctrine and tactics to meet an asymmetrical threat and building or improving equipment to support forces. The installation trains and supports units from both the Active Army and Reserve Components, many of which deploy in support of Operations Enduring Freedom and Iraqi Freedom.

Dr. Roberts is the historian at the United States Army Engineer School, Fort Leonard Wood, Missouri.

The Maneuver Support Center of Excellence

Compiled by Ms. Shirley A. Bridges

Fort Leonard Wood, Missouri, home of the United States Army Engineer School (USAES) since 1989, welcomed two more schools in 1999 due to the 1995 Base Realignment and Closure (BRAC) Commission recommendation to close Fort McClellan, Alabama. The addition of the United States Army Chemical School—now the Chemical, Biological, Radiological, and Nuclear (CBRN) School (USACBRNS)—and the United States Army Military Police School (USAMPS) brought about the activation of the United States Army Maneuver Support Center of Excellence on 1 October 1999. This led the way for other United States Army Training and Doctrine Command (TRADOC) schools to consolidate and form centers of excellence as a result of the 2005 BRAC Commission recommendations.

According to the official TRADOC definition, a center of excellence is *"a premier organization that creates the highest standards of achievement in an assigned sphere of expertise by generating synergy through effective and efficient combination and integration of functions while reinforcing the unique requirements and capabilities of the branches."*[1]

Commanding General of the Maneuver Support Center, Major General William H. McCoy, describes the mission for the center as follows:

"The Maneuver Support Center, enabled by a world-class garrison at Fort Leonard Wood, creates warriors and develops leaders and capabilities that assure the mobility, freedom of action, and protection of the forces they support."

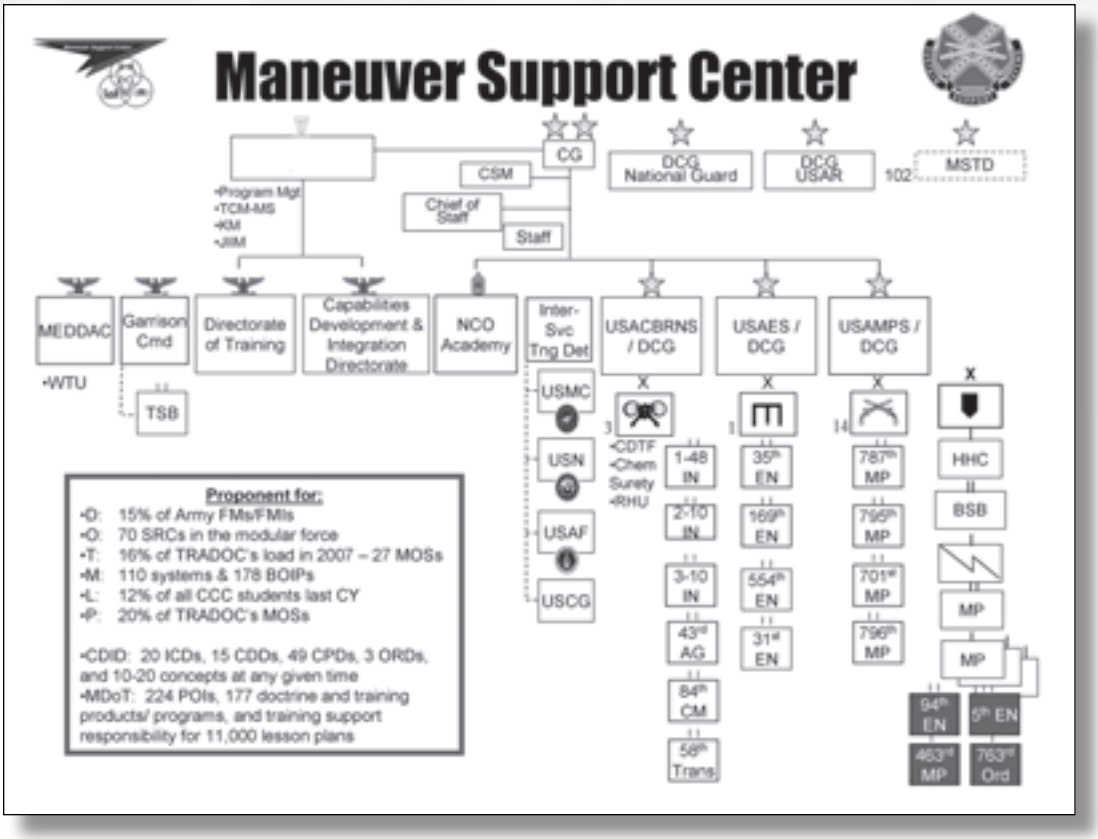
Colocating and integrating the three schools not only has increased efficiency but also has enhanced their training and improved their ability to work together in a wartime environment because they have an understanding of each other's mission.[2] In addition, joint training with our sister Services at Fort Leonard Wood provides an opportunity for even greater efficiency and understanding.

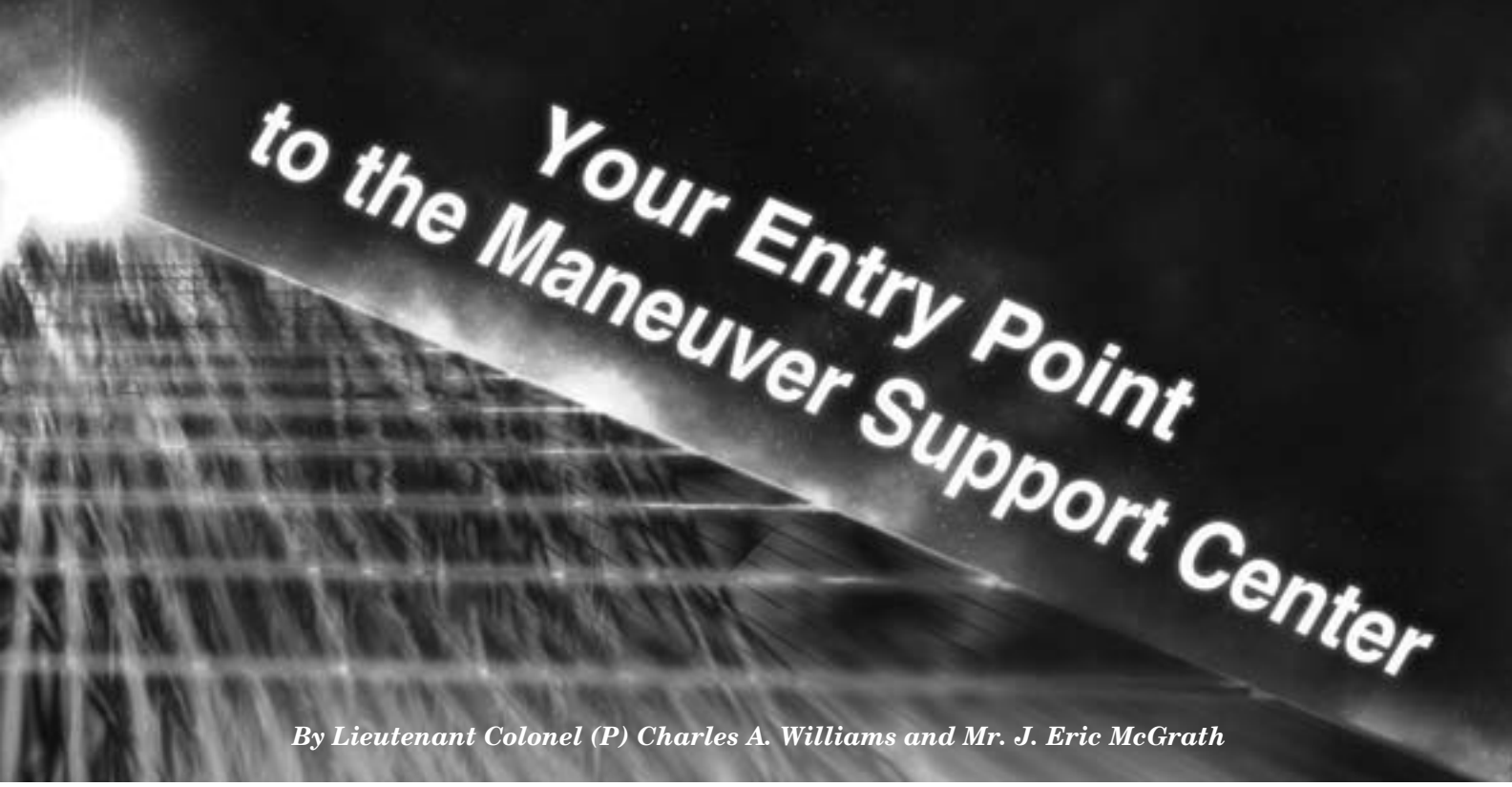
Ms. Bridges is the managing editor of the Maneuver Support Magazine.

Endnotes

[1] *TRADOC News Service,* "BRAC Commission Recommendations Become Law," 10 November 2005.

[2] Donna Miles, "Fort Leonard Wood Provides Blueprint for BRAC Realignments," *American Forces Press Service,* 17 June 2005.





Your Entry Point to the Maneuver Support Center

By Lieutenant Colonel (P) Charles A. Williams and Mr. J. Eric McGrath

[TRADOC Capability Manager–Maneuver Support] TCM-MS will perform as the Army's centralized manager for the doctrine, organization, training, materiel, leadership and education, personnel, and facilities (DOTMLPF) program management and integration of all developmental programs associated with functional and multifunctional capabilities that assure the mobility, freedom of action, and protection of Army units in full spectrum operations. TCM-MS will coordinate and synchronize the efforts of maneuver support capability developments within the Maneuver Support Center (MANSCEN). TCM-MS will also interact with other Center of Excellence TCMs and Capability Development Integration Directorate Management Cells, other Services, and the joint community to identify and solve required capability gaps.

TCM-MS is responsible for duties outlined in TRADOC Regulation 71-12, TRADOC System Management. Assisted by the chemical, engineer, and military police proponents, TCM-MS will ensure [that] deliverables are developed along timelines to meet capability milestones. The TCM-MS will manage the timely DOTMLPF synchronization of all MANSCEN capability developments to ensure that all aspects of doctrine, organizing, training, and leader development [are] synchronized with the issue of new equipment to the field. The TRADOC commanding general and MANSCEN commanding general will resource TCM-MS in order to meet capability objectives.

TCM-MS, by means of this charter, is hereby delegated the full line authority of the TRADOC commanding general for the central management of assigned responsibilities...

—General William S. Wallace
Commanding General, TRADOC
1 October 2007

The commanding general of MANSCEN holds the TCM-MS responsible for "being the proponent" for the maneuver enhancement brigades (MEBs), the brigade special troops battalions (BSTBs), and since January, the chemical, biological, radiological, nuclear, and high-yield explosives (CBRNE) operational headquarters, the 20th Support Command, CBRNE. This charter fulfills his vision for MANSCEN. He reoriented a materiel systems-oriented TCM toward capabilities and organizations. In his message to the United States Army Training and Doctrine Command (TRADOC) requesting approval of this charter, he identified integration as his greatest concern in this Center of Excellence organization.

Missions

We execute this charter in four major areas, as follows:

- Externally, the TCM operates the MANSCEN Fusion Center, as required, to coordinate installation responses to requests for assistance from deployed and deploying commanders and to assist Headquarters, Department of the Army, and the United States Army Forces Command (FORSCOM) in the reset and training readiness of their forces. The Fusion Center is part of the Maneuver Support Knowledge Network (MSKN) on Army Knowledge Online (AKO). We also attend the branch schools' classified counterpart videoteleconferences.
- Internally to TRADOC, the TCM coordinates DOTMLPF solutions with other TRADOC centers and capability managers to ensure that maneuver support units are adequately supporting and supported.
- Internally to MANSCEN, the TCM-MS establishes synchronization procedures and synchronizes the

actions of the MANSCEN Capability Development Integration Directorate (CDID), the MANSCEN Directorate of Training (MDoT), and the MANSCEN schools to deliver maneuver support capability to commanders.

- And finally, TCM-MS coordinates international program activities conducted by CDID, MDoT, and the MANSCEN schools to ensure participation in activities and completion of tasks.

Within TRADOC, there are 30 TCMs overseeing unique capabilities represented throughout the Army. Most are responsible for materiel systems such as air sensors and unmanned air systems. Several are responsible for organizations such as heavy brigade combat teams (BCTs), infantry BCTs, and Stryker BCTs. A TCM is not a large organization. TCM-MS, like most, is staffed with seven people and led by a colonel whose title is "the TCM."

External Stakeholder Relationships

Like the organizationally focused TCMs, we represent our stakeholders in TRADOC studies such as the ongoing Organization-Based Assessment. We implement Warfighter Forums that will take MSKN to the next level of effectiveness. And we are the designated entry point for information and assistance from MANSCEN. Part of our mission is to coordinate with organizationally focused TCMs, which are supported by BSTBs, by MEBs, and by the functional brigades and battalions at MANSCEN (see Figure 1).

Part of our mission is to engage our stakeholders. The MEB is new and its doctrinal manual is still a field manual, interim. Its representation in division and higher doctrine is thin. Habitual associations with those organizations do not yet exist, so we make time and dedicate resources to partner and communicate with division, corps, and higher staffs about what capabilities the MEB provides.

Internal Stakeholder Relationships

Within MANSCEN, we are part of the Program Management and Integration Directorate (PMID). Together with our two sister directorates, CDID and MDoT, we report to the MANSCEN deputy commanding general. As our name implies, our job is synchronization. While doctrine and collective training are consolidated under MDoT, individual training execution is still under the three schools and the MANSCEN Noncommissioned Officer Academy. Thus the development of training takes place in five organizations: individual training in the three schools, collective and leader training in MDoT, and training for new equipment in CDID. Together with joint and inter-Service training, there are many moving parts that require a management structure to oversee and synchronize (see Figure 2).

TCM-MS (External Operating Prism) Maneuver Support Outcomes: Synergistic Connectivity and Freedom of Action

Figure 1. The External Family of Stakeholders

TCM-MS (Internal Operating Prism) MANSCEN Governance and Organizational Linkages

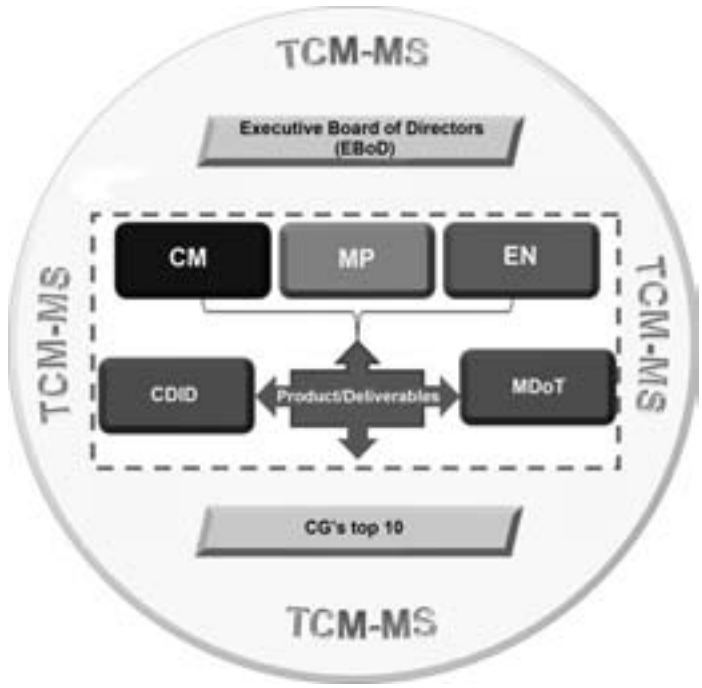


Figure 2. The Internal Family of Stakeholders

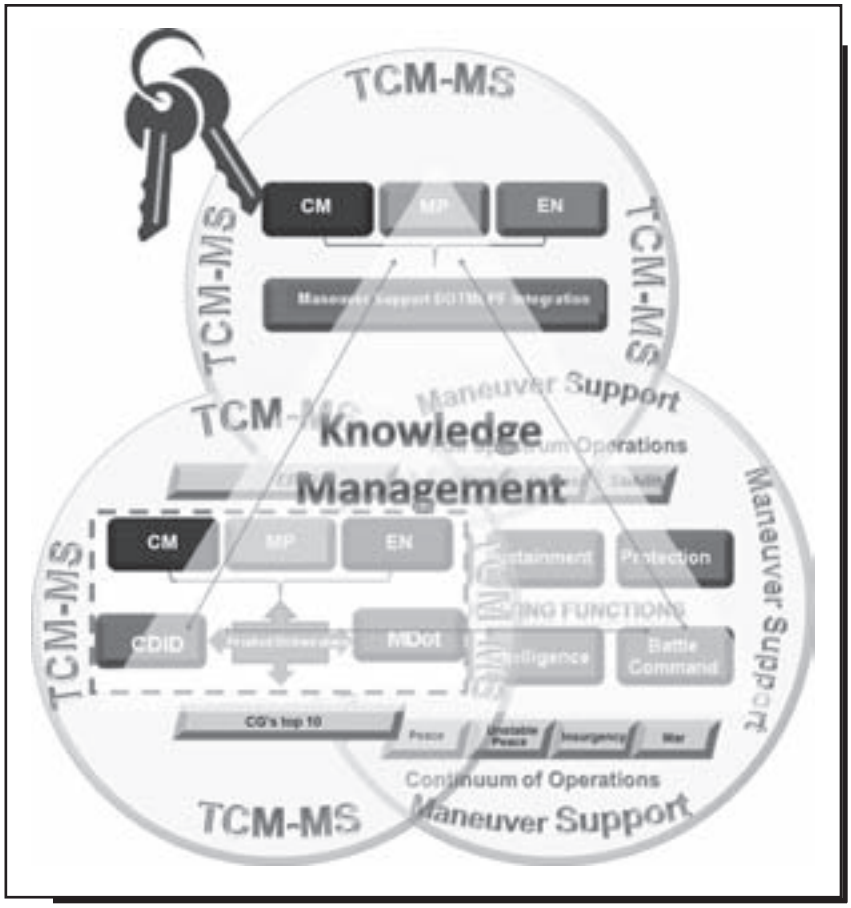


Figure 3. The Fusion of the Greater Family of Maneuver Support Stakeholders

Fusion of Maneuver Support Stakeholders

We coordinate across MANSCEN to assist maneuver support units (see Figure 3). Over the next five years, the Army will organize and activate 23 MEBs, the vast majority of them in the National Guard. Most of these new MEBs are converting from functions other than chemical, engineer, or military police, so gaining staff expertise is a challenge. Since we are not resourced for mobile training teams to teach the staffs, TCM-MS hosts coordination meetings that accomplish these functions and prioritize our efforts.

In addition to these missions, we also execute focal projects as directed by the commanding general or deputy commanding generals. Recent examples include DOTMLPF analysis for police intelligence operations and tactical wheeled vehicle fire prevention and suppression. In these cases, our role as the integrator is to organize the experts—many of them in the field—to get the best answer to resolve issues and fix problems.

Summary

We at TCM-MS are the designated entry point into MANSCEN for BSTB, MEB, and CBRNE operational headquarters issues. We take telephone calls, e-mails, and MSKN messages and make sure they're delivered to the right subject matter expert and ensure that a response goes out in a timely manner. For assistance with anything concerning maneuver support, contact us. It is our mission to find the best possible answer and solution.

Lieutenant Colonel (P) Williams assumed duties as the TRADOC Capability Manager-Maneuver Support in September 2007. His most recent assignments include Deputy Brigade Commander, 16th Military Police Brigade (Airborne), Fort Bragg, North Carolina, and Baghdad, Iraq; Commander, 342d Military Police Battalion; Director of Emergency Services and Chief, Command and Tactics Division, United States Army Military Police School, Fort Leonard Wood, Missouri. He has a master's in counseling and leader development from Long Island University, is a graduate of Command and General Staff College, and is a Senior Service College selectee. He was selected for brigade command in 2007.

Mr. McGrath entered federal service as a second lieutenant in the Corps of Engineers in 1974. He left active duty in August 1981 and entered civil service as part of the Directorate of Combat Developments, United States Army Engineer School. Since 1998, he has been the Deputy TRADOC Capability Manager at Fort Leonard Wood, Missouri. Mr. McGrath also served in the United States Army Reserve and the Army National Guard as a primary and special staff officer at all echelons through corps. He is a graduate of the Engineer Officer Basic and Advanced Courses, the Combined Arms and Services Staff School, the Command and General Staff College, and the Army Systems Management College.

"Together with joint and inter-Service training, there are many moving parts that require a management structure to oversee and synchronize."

Maneuver Support Concept Capability Plan

By Mr. Michael L. Fowler

The Maneuver Support Center of Excellence is leading an Integrated Concept Development Team to write a Maneuver Support Concept Capability Plan (CCP). This effort is a partnership with other schools and centers and was chartered by the Army Capabilities Integration Center on 7 April 2008. The CCP describes the means to optimize ground movement and maneuver. Maneuver support encompasses the related tasks and systems that directly remove or mitigate natural, artificial, and human obstacles and hazards, providing derived protection and enabling ground forces to act, move, and maneuver as desired. Maneuver support results from the integration of active and passive capabilities that shape the physical and psychological operational environments to enable continuous movement of personnel, vehicles, and equipment to act against traditional, irregular, catastrophic, and disruptive challenges. Maneuver support sets the physical conditions that enable commanders and joint, interagency, intergovernmental, and multinational (JIIM) partners to apply the elements of national power at the operational and tactical levels. Maneuver support is key to enabling ground forces to conduct the Army key ideas of—

- Shaping and entry operations.
- Intratheater operational maneuver.
- Decisive maneuver.
- Concurrent and subsequent stability operations.
- Distributed support and sustainment.

Concept Capability Plan Scope

This CCP focuses on tactical and operational maneuver support capabilities and maneuver support to strategic capabilities. The CCP considers current, projected, and desired maneuver support capabilities for maintaining dominance in a full spectrum environment in the 2015–2024 timeframe. This document describes a wider scope than the current "conventional" tactical usage of today's Army engineer, military police, and chemical branches. The CCP will center on the movement-enabling capabilities of these branches, as well as those provided by explosive ordnance disposal (EOD) personnel. It will include maneuver support capabilities toward information engagement (IE) operations in support of unified action. It will not include capabilities or specialties such as air and missile defense, maintenance, transportation, quartermaster, any medical specialty, fixed-site protection, or up-armoring or armor enhancements. This document focuses on operations outside the homeland, but its tenets can be applied to operations in support of homeland defense and civil support.

Photo by Specialist Alfredo Jimenz, Jr.

Military police Soldiers do their part in bringing stabiliity to Tikrit.

Maneuver Support Operations

Maneuver support operations center on operations in the physical

Photo by U.S. Army Alaska

After arriving on-scene during a recent training mission in Valdez, Alaska, Soldiers from the 95th Chemical Company set up the Chemical, Biological, Radiological, and Nuclear Unmanned Ground Reconnaissance (CUGR) robot control station.

operational environment, but provide significant input into IE operations, providing a basis for optimized movement and maneuver through reduction of the adversaries' will to attack friendly forces. Maneuver support assets implement or support scaled holistic implementation of the diplomatic, informational, military, and economic (DIME) elements of national power at the tactical level in support of theater operations. Engineers bring construction, infrastructure, and contract oversight experience (economic and informational impact). Military police restore order, shape police forces, and resettle refugees and displaced persons (economic and informational). IE, civil affairs, and psychological operations (PSYOPS), fed by the effects of maneuver support operations, shape public opinion, disseminate information, and lessen attacks and opposition (informational). Future chemical, biological, radiological, nuclear, and high-yield explosives (CBRNE) capabilities will reduce CBRNE hazards and restore the environment to a usable condition (economic and informational). EOD capabilities render safe conventional, unconventional, and improvised explosive device (IED) threats (economic and informational).

Traditional Scenario

In a traditional setting, maneuver support assets will perform their primary functions to ensure theater access, build and sustain operational lines of communication (LOC), and support movement and maneuver through activities such as—

- Eliminating or reducing explosive and nonexplosive hazards and obstacles.
- Conducting route and area clearance and security, neutralizing hazards.
- Conducting CBRNE activities.
- Conducting detainee or internment/resettlement (I/R) operations.
- Controlling populations.
- Emplacing obstacles to enemy movement and maneuver.
- (Re)constructing infrastructure, as needed.

Their functions will be full spectrum, tailorable, and scalable as needed.

Irregular Scenario

In an irregular scenario, maneuver support assets will execute their missions in the same way as for traditional operations. Additionally, there will be unique requirements based on the theater and mission, enemy, terrain and weather, troops and support available, time available, and civil considerations (METT-TC) conditions. The overall load on maneuver support assets will be no less than that required by traditional operations and will require agile and robust formations. It is likely that the primary missions in irregular scenarios will be—

- Eliminating or neutralizing explosive and nonexplosive/CBRN hazards.
- Providing route and area clearance and security.
- Providing engineer construction support.
- (Re)establishing civil security and control.
- Restoring order and governance.
- Supporting governance and economic and infrastructure development.

Catastrophic Challenges

Catastrophic challenges require focused, rapid, and agile action, potentially in a CBRN-contaminated environment. Action may occur before or after a catastrophic attack or event. If response is possible before an event, rapid action may prevent the event. Specialized CBRNE response teams will perform the actual threat neutralization—supported by maneuver support and non-maneuver support forces as needed to move to the required location, secure it and the surrounding area(s), and conduct the neutralization. If neutralization is unsuccessful or if an event occurs, the CBRNE, explosive hazard, population control, and potentially the infrastructure capabilities of maneuver support forces will be key. Simultaneous action to secure and protect populations and areas will minimize immediate and successive impacts. Immediate action to remediate the hazard and

contaminated areas will begin and will continue until local or host nation capabilities can assume the mission.

Disruptive Challenges

Disruptive challenges are doubly difficult to protect against and plan for because they are not only challenges not encountered before, but potentially require a response for which no ready response is available. Threats such as these that counter U.S. capabilities or give the enemy an advantage will be extremely difficult to plan for and react to. An example is a disruption of network operations, resulting in interruptions or stoppage of data and voice information flow. Another would be a breakthrough in nanotechnology, materials, energy weapons, or less-than-lethal or missile technology that enables the enemy to negate U.S. superiorities. Regardless of the type of disruptive challenge that arises, maneuver support forces must retain the capability to perform their primary functions in any environment. This may include CBRN contamination, a total loss of space and air breathing data and communications platforms, and advanced electronics. Maneuver support forces must retain the capability to perform in a contaminated, hard-copy environment.

Maneuver Support Tenets

Maneuver support is described by five major tenets of capabilities. These tenets are—

- Maneuver support command and control/technical expertise.
- Assured mobility operations.
- Consequence management operations.
- Population control operations.
- Stability operations and rear/support area operations.

Maneuver Support Command and Control/Technical Expertise

As part of mission analysis, a combination of Army and other-Service maneuver support personnel, regional experts, and agency civilians conduct thorough mission analysis to determine stability mission requirements. They use a variety of historical, cultural, regional, environmental, and geospatial data—combined with embassy input and human and sensor inputs from ground analysis. The final combined mission requirements listing includes—

- Support to civil security and civil control.
- General law and order.
- Governance.
- Assistance with handling terrorists and their supporters and networks.
- Enhancements to transportation, water, power, and other public works infrastructure.
- Remediation of hazards.

There is also a requirement to clear routes and areas to remove explosive remnants of war from previous conflicts in order to remove dangers to civilian and military movement and base camp operations. The clearance capability will also allow the force to react to IEDs or related explosive hazards.

Assured Mobility Operations

Any ground movement during an operation may require robust, agile, and flexible assured mobility support, beginning with the first movement from the seaport of departure (SPOD) or airport of departure (APOD). Tailored maneuver support route clearance and mobility support capabilities are identified and deployed. They begin clearance operations at the APOD and conduct day/night, all-weather operations as needed along the LOC network to enable the initial movement of troops and equipment from APOD to their final destinations. Maneuver support formations clear or bypass obstacles and hazards along the LOC network. Following initial clearance, the LOC network comes under constant surveillance and patrolling to ensure route security.

Precise and detailed remote sensing analysis of the terrain define the existing LOC route network, enabling planners to project primary, secondary, and further routes as desired to support the overall operation. Ground reconnaissance and testing of the projected LOC network by human and autonomous or teleoperated equipment determines LOC capabilities and limitations. When existing infrastructure fails to meet requirements, analysis identifies alternate routes or bypasses. When alternate routes or bypasses are unavailable and infrastructure repair work or construction is necessary, analysis data enables planners to compile requirements for the materials and repair capabilities needed to assure initial entry and ground movement throughout the operating area as needed.

After initial (re)construction of LOCs, the effects of weather, traffic, and potentially of elements opposed to the coalition effort require continuing assured mobility and gap-crossing capabilities. Advanced systems and capabilities for rapid gap-crossing and nonexplosive obstacle reduction operations become necessary within days, as the initial storms of the approaching local rainy season cause some previously passable dry or wet gaps to become impassable to most platforms. As this was projected in initial mission estimates, sufficient crossing capabilities were part of the deployment package enabling the force to maintain its ability to conduct multiple in-stride crossings, as well as rapid reduction of nonexplosive obstacles.

Prediction of the usage and emplacement of explosive hazards allows the force to mass its primary explosive hazard detection and clearance capabilities as appropriate to most rapidly neutralize threats. Data on known explosive remnants of war sites was incorporated into the movement hazard template, and neutralization efforts occur accordingly. Improvements in technologies for explosive hazards detection allow rapid detection at or near desired movement speeds. In most cases, detection occurs as planned and formations are able to bypass or avoid the hazard or

neutralize it by electromagnetic, sonic, mechanical, or other means. Backup systems within moving formations ensure that hazards not initially detected are either detected or neutralized via secondary means. These systems—being a mix of autonomous and teleoperated systems and platforms—remove the danger to troops and ensure that no major casualties result despite multiple incidents. Throughout the mission, the force continues to exercise maximum flexibility in both responding to changes in enemy hazard employment and in proactively eliminating the enemy's ability to place hazards.

In addition to conventional manned security patrols, the force maintains continuous route security on all vital routes via manned and unmanned ground, air, and space platforms and sensing equipment, providing persistent reconnaissance in all weather. Relocatable, autonomous mobile sensor equipment provides greatly enhanced coverage, tailorable to the terrain, weather, and friendly and enemy conditions. Detection of explosive, nonexplosive, and CBRN hazards occurrs rapidly. Enemy efforts to emplace such hazards are quickly detected, and appropriate lethal or less-than-lethal means are quickly brought to bear to interdict these efforts and kill or capture the emplacers. These systems and capabilities provide constant situational awareness of route conditions and security and assure ground mobility for coalition forces.

Consequence Management Operations

Joint Publication (JP)1-02 defines consequence management as "*actions taken to maintain or restore essential services and manage and mitigate problems resulting from disasters and catastrophies, including natural, manmade, or terrorist incidents.*"[2] For the purposes of this CCP, consequence management includes this general description, but its primary focus is on weapons of mass destruction (WMD) consequence management.

Threat analysis indicates that the potential for damage in the physical and psychological domains due to such attacks is high enough to deploy consequence management assets, because the host nation has insufficient capability to manage such incidents. Specialized teams—capable of responding to toxic industrial chemicals (TIC) or other WMD attacks—deploy throughout the area of operations to best respond to potential attacks. These teams combine with other maneuver support site assessment teams, military police, host nation, and select coalition personnel and conduct joint hazard assessments on all potential sites and discuss all potential WMD incidents. Using its assessments and conclusions, the combined team conducts rehearsals of responses to various incidents. Analysis conclusions also result in reallocation of host nation and U.S./coalition security and surveillance assets to maximize detection of such incidents before they occur and ensure timely response if they do occur.

Population Control Operations

To support civil order and control, maneuver support elements frequently interact with the population in support of host nation forces or act alone. Military police and Department of Justice personnel responding to criminal activity and conducting missions to break up criminal networks seamlessly operate side by side with host nation law enforcement organizations, using joint procedures and interoperable communications equipment. During routine patrols or route and area security missions, or while responding to incidents, maneuver support elements meet armed or unarmed resistance or confront undesired activity. They encounter antigovernment protests that occasionally involve large and uncooperative crowds. During curfew hours, there will be chance meetings with persons who may be conducting terrorist activities or who may be ordinary citizens with no negative intentions. Throughout the stability operation, there are multiple requirements to control armed and unarmed populations in confrontational and nonconfrontational situations.

Stability Operations and Rear/Support Area Operations

Stability Operations. According to FM 3-0, stability operations are "*various military missions, tasks, and activities conducted…in coordination with other instruments of national power to maintain or reestablish a safe and secure environment, provide essential governmental services, emergency infrastructure reconstruction, and humanitarian relief.*"[3]

As a parallel effort with restoring and maintaining civil control, military and civilian maneuver support elements conduct actions to enhance the host nation's capabilities in multiple functional areas. Early in the stability operation, this effort is heavily focused on security and in meeting immediate needs, but begins operations along multiple lines of work to strengthen the knowledge and capability base across the board. Maneuver support elements apply skills and knowledge in cooperative sessions with national and local personnel to build capacity in—

- Security.
- Population control.
- Construction engineering.
- Sewerage.
- Water extraction, purification, and transportation.
- Electricity generation and distribution.
- Trash composting or disposal.
- Explosive ordnance identification and disposal.
- Strategic communications/IE.

Once maneuver support elements have assisted the host nation in preparing the physical and institutional framework, further elements begin a greater presence in the stability operation. When construction has been completed on medical facilities, schools, police stations, communications centers, and other key facilities, further military and civilian organizations begin to flow into the operation. The permissive security situation and presence of new usable facilities not only allow deployable military and civilian

organizations to operate, but a wide variety of other governmental agencies and organizations and nongovernmental organizations also begin operations and rapidly mature the stability operation, significantly expanding host nation capabilities in multiple vital areas.

> ***Foreign consequence management is "assistance provided by the United States government (USG) to a HN [host nation] to mitigate the effects of a deliberate or inadvertent CBRNE attack or event and to restore essential government services."[1]***
>
> ***—Joint Publication 3-41***

Rear/Support Area Operations. The CCP will address support area operations at the division and brigade levels. In a division area of operations, a maneuver enhancement brigade (MEB) will perform the support area operations mission. In a brigade combat team (BCT) area of operations, the brigade special troops battalion (BSTB) will perform this mission. As part of these operations, they perform vital missions such as—

- Conducting terrain management.
- Controlling movement.
- Integrating intelligence, surveillance, and reconnaissance (ISR).
- Conducting operational area security.

The MEB is responsible for security throughout its area of operations. It accomplishes this by conducting persistent reconnaissance using human and electronic means in order to maintain the common operational picture (COP), The majority of effort in the MEB area of operations centers on area security, with specific concentration on reconnaissance and security of routes and convoys. To fill the reconnaissance gap and maintain constant situational awareness, the MEB employs multiple automated integrated sensor/shooter systems at appropriate locations along routes. These systems provide the MEB the capability of viewing routes in real time to near-real time in day and night conditions and are capable of target engagement with lethal and less-than-lethal means. When necessary, these sensors link to more capable and robust networked engagement systems that provide more powerful lethal or less-than-lethal effects. To supplement these systems, convoy security forces accompany convoys as needed to ensure protection from limited threats. When needed, route repair and maintenance assets are dispatched to repair problems identified by ISR inputs, convoy personnel, or assets conducting operations.

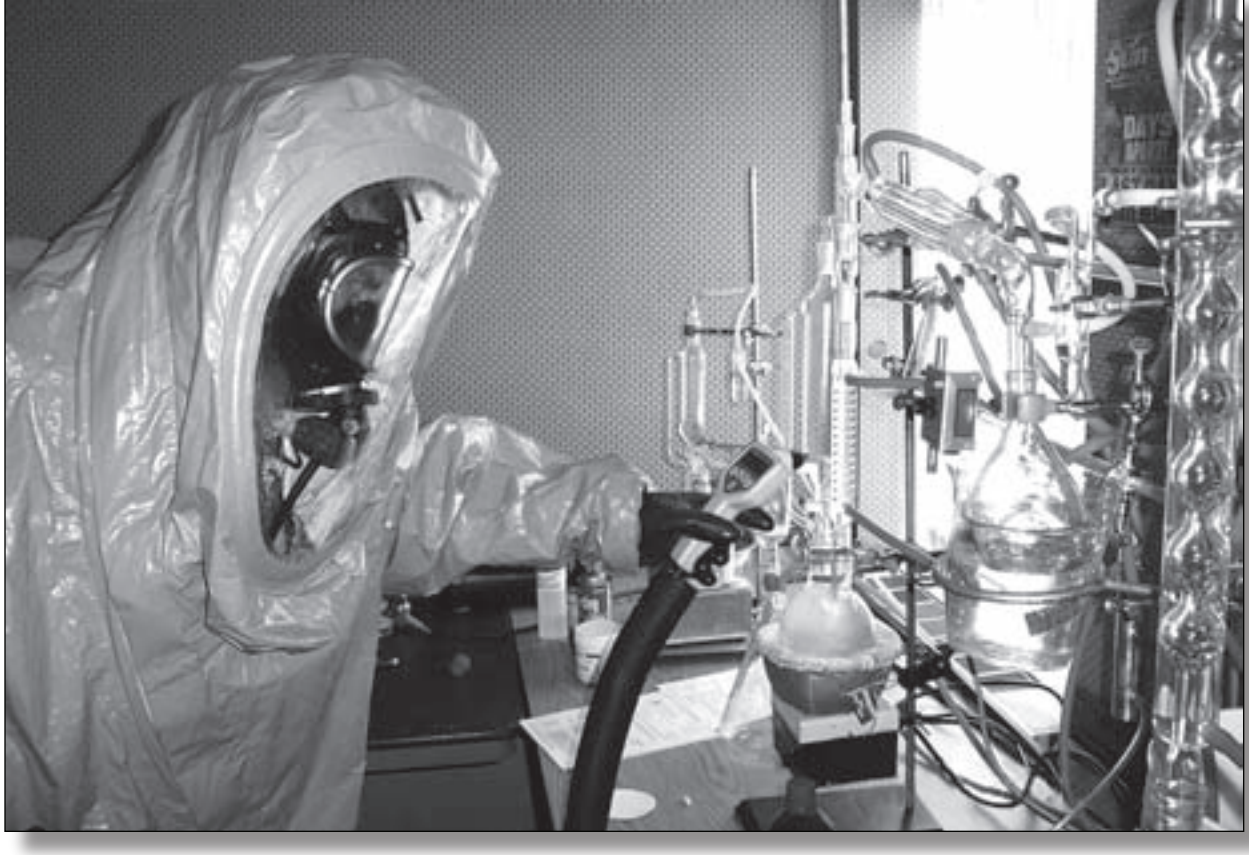
Summary

Over the next several months, this Integrated Concept Development Team will be developing the Maneuver Support CCP, which will illustrate the

(Continued on page 25)

Photo by Sergeant Seth Myers

A Soldier from the 739th Engineer Company (Multirole Bridge) drives the raft doing reconnaissance in the area before a bridge is laid down during Exercise Patriot Warrior at Fort McCoy, Wisconsin. This raft will also provide security when the bridge is being built.



Maneuver Support Center and Weapons of Mass Destruction-Civil Support Team Training and Education

By Mr. Peter G. Schulze

Weapons of Mass Destruction-Civil Support Team (WMD-CST) members are motivated Soldiers and Airmen who have mastered complex technical tasks and can perform them under the most hazardous conditions.[1] While individual teams are state-controlled organizations and may vary in quality, as a group they are one of the most capable all-hazard (chemical, biological, radiological) domestic response assets in the Department of Defense (DOD). The ability to realize this capability is impacted by many issues. Among the most critical are—

- Procuring technology improvement in a timely manner, given DOD process challenges.
- Making the correct choice of technology solutions.
- Having a dedicated commitment by the leadership for both process change and the necessary investment in technology systems.
- Providing for effective training and education.

This article focuses on the latter issue, examining how the United States Army Maneuver Support Center (MANSCEN), working with the National Guard Bureau (NGB), initiated a performance analysis process that led to an effective training and education program in support of the WMD-CST mission.

Training and Education: A Long-Term Investment

Training and education can make or break any technology implementation and determine when, and if, the investment in a materiel solution continues to pay dividends in expected capability. For this reason, MANSCEN and the NGB, as the specified and functional proponents, formed a partnership dedicated to implementing training and educational solutions that can be traced to performance indicators and their causal relationships. In a larger sense, these organizations have come to fully appreciate the value of knowledge and the true benefit of a continuum of training and education throughout the tenure of assigned personnel. The complexity of CST systems, the nature of the CST organization, the congressional visibility of the program, and their assigned mission contribute to a construct that is difficult to quantify around a single Service's set of doctrine, organizational, training, materiel, leadership and education, personnel, and facilities (DOTMLPF) analytical processes. As a result, the partnership looked toward a multi-Service, multiagency perspective to analyze requirements and develop training and educational solution sets. While this approach is not typical for traditional Army analytical practices, the perspective aligns well with a complex set of commercial off-the-shelf systems, the

associated need for technological innovation and cognitive improvement, the need to operate with civil authorities, the multi-Service composition of the team, and DOD training transformation.

DOD has published a vision for transforming how to train and educate Servicemembers to better prepare them to deal with the challenges they will face today and tomorrow.[2] MANSCEN and the NGB applied that vision to support a strategic goal that recognized the need to be responsive to a changing threat environment by taking a "lifelong approach" to enhancing knowledge and skills, as well as giving the unit commander maximum latitude to exercise individual and small-unit initiative. This approach applies the theoretical tenets of the 2006 Strategic Plan for Transforming DOD Training and Field Manual (FM) 7.0, *Training the Force*, into a capabilities-based training and education program designed to be responsive to technical innovation and evolving threats.

Historical Paradigm

Any look at the WMD-CST training and education program should begin with the initial tasking following the DOD Inspector General Audit D-2001-043, dated 31 January 2001. This report found that "Training programs and materiel for WMD-CST personnel were not sufficiently identified, developed, approved, and implemented."[3] On 1 February 2001, the Deputy Secretary of Defense approved a decision document that laid out the proposed corrective actions to address the department's concerns with the program. It required DOD, under the lead of the Assistant Secretary of Defense (Reserve Affairs), to conduct a formal program review and report to the Deputy Secretary of Defense not later than 1 August 2001. On 10 September 2001, the Deputy Secretary of Defense approved the results of that program review, which directed the adoption of interim training standards and required the Army to institutionalize training, in addition to completing a formal task analysis for the WMD-CST program. This analysis was assigned to the Commander, MANSCEN, on 28 June 2002, when the Army Assistant Chief of Staff for Operations and Plans designated MANSCEN as the specified proponent for WMD-CSTs. MANSCEN established an integrated concept development team (ICDT) that was approved on 29 May 2003. In partnership with the NGB, the ICDT established a formal process for reviewing each of the six functional areas of the CST—survey, command, operations, medical, communications, and administrative/logistics—as well as common core requirements. Starting in August 2004, the doctrine, training, and leadership (DTL) working group of the WMD-CST ICDT refocused all previous efforts and proposed an analytical plan consistent with DOD training transformation and WMD-CST program goals as aligned with CST commanders' priorities.

Analytical Foundation

Before the establishment of the ICDT, the WMD-CST community developed a history or feeling of independence from rigid stovepipe DOD processes. As a result, building an appropriate training and education program required significant cooperation with the CST community as well as consensus and negotiations among diverse stakeholders, including the following:

- United States Army Chemical, Biological, Radiological, and Nuclear School (USACBRNS)

Civil support team response training

- United States Army North
- Joint Program Manager
- United States Army Training and Doctrine Command
- United States Army Medical Department Center and School
- United States Army Signal School

Each stakeholder had its own set of agendas, processes, perspectives, and perceived requirements to be considered and addressed in order to document and institutionalize WMD-CST training and education. Despite these and other competing institutional activities that play a part in domestic consequence management, MANSCEN was and continues to be the unifying organization that supports the NGB's efforts toward building and sustaining the overall success of the WMD-CST program.

The ICDT cochairs—NGB Joint Staff Operations Directorate–Domestic Operations and MANSCEN Chief of Staff for Army National Guard Affairs—encouraged a management approach that recognized the need to adapt many institutional products, stovepipes, redundant processes, and gaps into an integrated program applied to effectively serve the members of the WMD-CST community and their associated mission. Their strategic training and educational goal is to promote joint and interagency interoperability by advancing the procedural use of advanced detection, analytical, and communications equipment; improving techniques for operating in a hazardous environment; enhancing cognitive skills; and developing adaptive leaders. This goal emphasizes the development of the individual and the unit based on operational expectations, both in regard to necessary tangible skills and desired intangible attributes. In order to fully implement this goal, the DTL working group devised an overarching plan that was designed to take advantage of, and maximize opportunities within, the institutional, operational, and self-development domains.

In an environment where Airmen, Soldiers, and leaders must apply and transfer learned skills to an unlimited set of conditions, limiting training and education to the institutional domain did not provide for "mastery" learning, where iteration occurs between learning, experience, and continued learning until mastery is achieved.[4] Determining which domain provided the most effective points of intervention and reinforcement throughout the learning process is critical for personnel expected to operate in ambiguous hazardous environments and complex situations. Figure 1 illustrates how the training and education domains, skill levels, experience, and the operational environment interact and shows their associated propensity for change.

Variations of this construct, while well articulated in DOD and Army documents, are not typically applied nor encouraged by proponents and customers of the institutional training domains. There is a natural tendency to use institutional training and education as the cure for most performance problems, resulting in costly solutions that do not address the root of the problem. Identifying critical training and education solutions throughout all the domains helps reduce the overall costs while increasing the effectiveness of the WMD-CST training and education program. The structured analytical approach used by the DTL working group served to mitigate the natural tendencies for specific institutional solutions, despite significant pressure by training providers and customers to conclude every analytical effort with a formal institutional solution.

Figure 1. Training Interaction Model

Analytical Construct

The process used to validate, develop, and institutionalize WMD-CST training and education requirements continues to be a deliberate and anticipatory effort by MANSCEN and the NGB. The unique personnel composition of the teams, complex array of equipment, regulatory environment, and DOD Inspector General visibility required a more comprehensive analysis than previously attempted by MANSCEN. The DTL cochairs realized that the traditional DOTMLPF needs analysis was not structured to support a program designed to operate from a multi-Service, multiagency perspective. Army DOTMLPF analysis is nonprescriptive and is often applied as a gap-analysis tool, generating perceived requirements for each DOTMLPF component without a causal or comprehensive set of performance indicators and potential solution sets for the entire system. The

	Level of Performance Indicators	Critical Performance Indicators			
		Training/Education (doctrine, data, feedback, knowledge, skills*)	Material/Facilities (Support, tools, capacity, equipment, funding, transportation, etc**)	Personnel (prerequisites, consequences, rewards, incentives, motives)	
Environment	External				Outside*
Environment	Organizational				Within DoD
Environment	Team				Within DoD
Individual	Job				Within DoD
	Performance Outcome (Expectations)	Collect samples of chemical agents/substances as a member of a domestic survey team.			

*Note: Every level of civil support teams performance is influenced by non-DoD factors.

Figure 2. Modified Synchronized Analysis Model

importance of using a structured performance-analysis model is directly related to the need to align potential performance issues to their appropriate solution. The visibility of the CST program required an accurate assessment of potential performance issues in order to rapidly implement a targeted set of solutions. For that reason, under the guidance of the DTL cochairs, the USACBRNS staff approached the analysis from a human performance technology (HPT) perspective. The framework of the performance analysis was guided by the application of a modified version of Thomas Gilbert's Behavior Engineering Model (BEM), known throughout the HPT professional community.[5] Modification of the original BEM was initiated December 2005 by the USACBRNS staff to support military-specific doctrine, organizational, training, materiel, and personnel performance issues. The model has continued to mature and is now derived in part from Dr. Anthony Marker's Synchronized Analysis Model (SAM).[6] This variation of the BEM stratifies performance indicators into various levels, allowing the analyst to pinpoint potential barriers to full performance at the individual, job, organizational, and external levels. The model used for the CST program integrates the cause-analysis model of Gilbert's BEM with levels derived from various environmental-analysis models, as populated with specific DOTMLPF elements.

Figure 2 typifies one of many performance expectations modeled by the USACBRNS staff to organize volumes of data and apply cause-and-effect relationships for various defined outcomes. This type of data organization was applied to the analysis process to validate actual or potential performance gaps that could lead to the development/modification of training and education solutions.

While the application of HPT is new to the Army, it has been used with much success throughout industry and other branches of Service, including the United States Navy and United States Coast Guard. Applying HPT processes to support the CST program served to align performance gaps with solutions and provided the CST community with a sound rationale for specific recommendations made by the DTL working group. The success of any performance improvement process is in its ability to accomplish measurable results that are aligned with the mission and goals of the organization. Since the WMD-CST program was previously criticized by the DOD Inspector General for not connecting training and education to documented requirements, the process was in part designed to realign mission requirements with the appropriate training and education solutions, as well as provide a culture of continuous improvement based on changing operational imperatives. The process achieved the following results:

> ***"MANSCEN was and continues to be the unifying organization that supports the NGB's efforts toward building and sustaining the overall success of the WMD-CST program."***

- Revised the basic course (Civil Support Skills Course) to include full International Fire Service Accreditation Congress compliance and reduction in course length by 4 days.
- Established a formal review cycle to update and/or modify required training and education.
- Reduced Civil Support Skills Course execution costs by 30 percent.

- Stratified domain and competencies for CST training and education requirements as documented in the NGB yearly planning guidance.
- Validated 71 percent of the courses on the CST training matrix.
- Reduced or eliminated redundant training.
- Approved an Air Force Job Qualification Requirement for the Unified Command Suite.
- Developed the Operations Sections Course.
- Developed the CST Precommand Course.
- Developed the improved Analytical Laboratory Course (Block 0).[7]
- Developed the CST Combined Arms Training Strategy (CATS).
- Developed CST doctrine (FM 3-11.22, *Weapons of Mass Destruction–Civil Support Team Operations,* 10 December 2007).

Performance issues that could not be mitigated by a training and education solution were referred to the applicable CST personnel and/or materiel working groups. While there continue to be measurable successes in the application of HPT to the WMD-CST program, some systemic problems remain. Most of these problems relate to an inability to apply clearly defined performance measures and outcomes within established institutional processes and associated unit training products. Fortunately, MANSCEN and the NGB continue to provide strategic oversight and leadership through the ICDT process. This contributes to a culture of planned improvement and will certainly lead to increasing capability for the WMD-CST program.

Summary

The challenge for MANSCEN and the NGB was to develop a comprehensive training and education program designed to support a joint unit within Army organizational and institutional constraints. The ICDT has, over the years, successfully navigated many of the complex institutional processes. It has provided a unified voice that supported and reinforced communication and negotiation among stakeholders with their own set of agendas, processes, perspectives, and perceived requirements, keeping them focused on supporting the WMD-CST mission. The ICDT structure and unified leadership of MANSCEN and the NGB contributed to the overall success by focusing all members on a training and education goal that supported the following objectives:

- Strengthen CST operations by preparing teams for evolving concepts.
- Improve team readiness by aligning education and training to mission requirements.
- Provide for unique local needs.
- Develop individuals and teams that intuitively think "multiagency."
- Develop individuals and teams that improvise and adapt to emerging crises.
- Achieve unity of effort from a diversity of means.

When tasked by the ICDT to solve a set of WMD-CST-specific training problems, the DTL's analytical plan produced a systematic performance-based set of solutions with broad applicability. These solutions focus on tying performance indicators with their causal relationships and implementing appropriate measures. Overall, the approach taken by MANSCEN and the NGB supports a continuous, adaptive process to ensure that all individuals and CST units receive the timely and effective education and training necessary to enable success in joint and multiagency domestic WMD response operations.

Mr. Schulze is the technical director for the Directorate of Training and Leader Development, USACBRNS, and serves as the MANSCEN Doctrine, Training, and Leader Development working group cochair for the WMD-CST Integrated Concept Development Team. Previous assignments as a Department of the Army civilian include DOTMLPF integrator for the United States Army Engineer School and training developer for the United States Army Military Police School. He holds undergraduate degrees in electrical engineering from Oregon Institute of Technology and in history from Virginia Polytechnic Institute and State University and a master's in curriculum and instruction from Virginia Polytechnic Institute and State University.

Endnotes

[1]Government Accountability Office Report, "National Guard Needs to Clarify Civil Support Teams' Mission and Address Management Challenges," GAO-06-498, May 2006.

[2]Department of Defense, "Strategic Plan for Transforming DOD Training," 8 May 2006.

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[4]M.K. McGinn and W.M. Roth, "Preparing Students for Competent Scientific Practice: Implications of Recent Research in Science and Technology Studies," *Educational Researcher*, Volume 28, Number 3, 1999, pp. 14-24.

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FORCE PROTECTION JOINT EXPERIMENT

By Mrs. Sonia L. Taylor

Current technologies, concepts of operations (CONOPS), and policies do not provide a comprehensive and sustainable joint force protection capability. Fielded force protection systems do not interoperate and integrate effectively nor do they provide comprehensive and integrated situational awareness. The Force Protection Joint Experiment (FPJE), through a series of four integrating assessments (IAs), was undertaken to assess how fusion, automation, and integration of force protection technologies reduce risk for the Joint Force Protection Advanced Security System (JFPASS) Joint Capability Technology Demonstration (JCTD), while exercising the integrated unit, base, and installation protection (IUBIP) CONOPS against relevant threats. The experiment involved a variety of force protection technologies to form a system of systems working in a synergistic fashion to defend and secure a base defense operating center.

The FPJE was a multi-Service collaboration of acquisition and combat development organizations created under the direction of the Department of Defense Physical Security Equipment Action Group with concurrence and sponsorship from the Joint Program Executive Office for Chemical and Biological Defense (JPEO-CBD), the United States Army Maneuver Support Center, and the United States Air Force 642d Electronic Systems Squadron. The FPJE IAs were guided by a joint advisory committee that chartered a joint integrated product team to plan and execute each assessment.

Multiple analytic protection efforts were being conducted by all the Services, with no overarching integrated design, in an attempt to lessen the numerous gaps and seams in protection capabilities. The Protection Joint Functional Concept (PJFC) describes protection as "*. . . a process, a set of activities and capabilities by which the joint force protects personnel, information, and physical assets against the full spectrum of threats. The joint force will achieve this through the scaled and tailored selection and application of multi-layered, active and passive, lethal and nonlethal measures, within the air, land, sea, space, and cyberspace domains, across the range of military operations, based on assessment of an acceptable level of risk. The joint force must protect itself starting from point-of-origin, continuing through transit, employment, sustainment, and redeployment. The goal is to prevent adversaries from employing capabilities that would restrict or prevent the joint force from conducting decisive actions at a time and place of our choosing.*"[1]

The IUBIP capabilities-based assessment (CBA) and the FPJE efforts have both attempted to identify protection capabilities and integrate existing Service capabilities into a family of systems using the defined protection construct of detect, assess, warn, defend, and recover (DAWDR). The operational application of the PJFC requires greater granularity and specificity in determining the joint force commander's protection responsibilities and capabilities.

The IUBIP functions consist of the capabilities required to provide integrated protection to units, bases, and installations during the 2012-2024 timeframe across the scope of fixed site, semifixed/expeditionary site, and mobile operations. The IUBIP effort began with the development of the CONOPS, a fully integrated, networked, persistent, scalable, and effective approach toward developing and employing protection capabilities. The functional area analysis identified 22 new tasks and associated standards that corresponded to each of the five protection functions. These 22 tasks formed the basis for the CBA's required capabilities. The relationship between the joint force protection construct and the 22 protection tasks developed for the IUBIP CBA are shown in Figure 1, page 22. The tasks highlighted in white were within the scope of the FPJE.

A model-experiment-model approach was used for the FPJE, beginning with a modeling and simulation event followed by a live experiment conducted at Eglin Air Force Base, Florida. The exploratory modeling and simulation runs established feasibility; refined concepts and tactics, techniques, and procedures (TTP); and identified the high-payoff runs to conduct for record. This iterative process was repeated four times. The first IA established the baseline and each subsequent IA built on the lessons learned from the previous one while incorporating additional technologies. The experimental design of the FPJE is shown in Figure 2, page 22.

A formal request for information for white papers generated a list of potential technologies. Government and industry technologies were selected according to defined technical assessment criteria, which included technical maturity and relevance to the IUBIP CBA and JFPASS JCTD. The force protection technologies used in the FPJE included the following:

- Day/night surveillance camera systems
- Ground and maritime surveillance radars

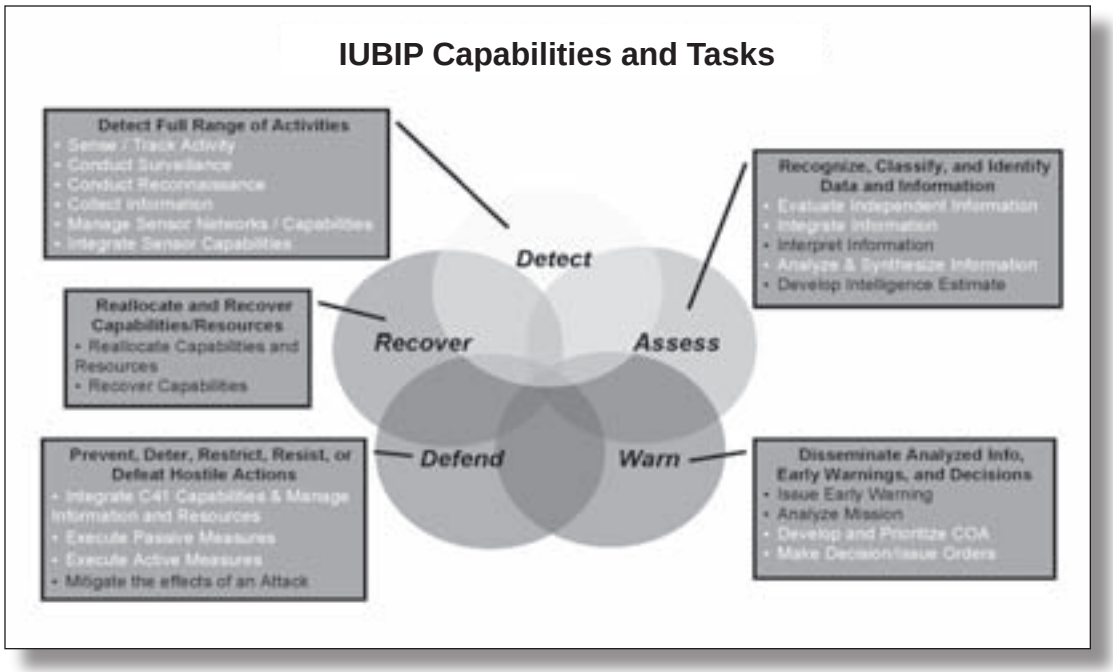

Figure 1. A list of the IUBIP capabilities and tasks. Highlighted in white are the tasks the FPJE is addressing.

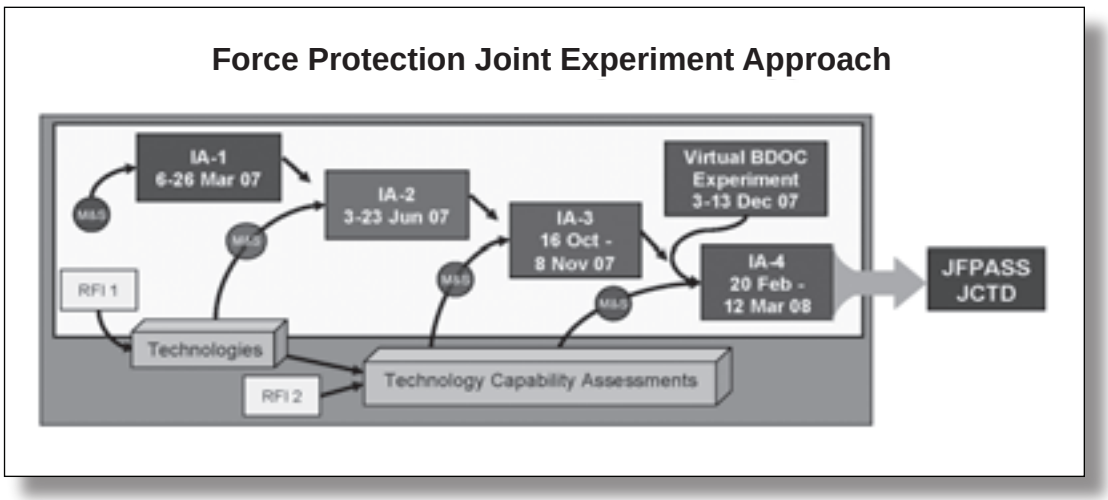

Figure 2. A list of the IUBIP capabilities and tasks. Highlighted in white are the tasks the FPJE is addressing.

- Unmanned ground vehicles (UGVs) equipped with chemical, biological, radiological, nuclear, and high-yield explosives (CBRNE) detectors and lethal and non-lethal weapons
- Unmanned aerial vehicles (UAVs) equipped with a day/night surveillance camera
- Global positioning system tracking equipment
- Gunfire/sniper location detection systems
- CBRNE detectors and plume-calculating software
- Seismic, acoustic, magnetic, and infrared unattended ground sensors with image-capture capability
- Fence sensors
- Short-range, microwave, and infrared break-beam perimeter sensors

Integrating Assessments

The FPJE involved the following IAs:

IA-1. The main focus of IA-1 was to establish a baseline to measure subsequent improvements in capabilities and how well gaps were filled. A total of 20 pilot runs were conducted to assess integration, test concepts, and refine TTP for the record runs. Pilot runs served to stabilize the various parts of the live experiment and maximize the effectiveness of the record runs for collecting the information desired. Fourteen record runs (9 daytime and 5 nighttime) established the base case and validated TTP.

IA-2. The addition of several force protection systems and technologies, a longer run time, and more complicated vignettes made IA-2 a more complex experiment. Twenty record runs (15 daytime and 5 nighttime) explored how the systems performed and assessed force effectiveness improvement with regard to fusion, automation, and integration.

IA-3. To allow IA-4 to be fully dedicated to fusion and automation, IA-3 was dedicated to the thorough integration of all technologies and locations. This allowed for incorporation of sensors designed for waterborne threats and the integration of disparate locations into a cohesive force protection plan. No data was collected and consequently IA-3 was not included in the assessment results.

IA-4. The critical technology improvement brought into IA-4 was the incorporation of a data fusion engine (DFE). This system served as the consolidator and disseminator for all data within the FPJE family of systems. The DFE provided greater flexibility to tailor the base defense operating center, depending on a given situation and readiness level. More importantly, it enabled fusion to occur, resulting in better situational awareness and understanding. A total of 29 record runs (17 daytime and 12 nighttime) were conducted using the same runs and vignettes performed during IA-2.

Results

The FPJE problem statement was "*How do fusion, automation, and integration of mature force protection technology solutions reduce risk to the JFPASS JCTD while exercising the IUBIP CONOPS against relevant threats, to include CBRNE, land, sea, and air?*" FPJE results are based on detailed analysis of quantitative data collected to address metrics and qualitative data collected from experiment participants, observers, and subject matter experts. The problem statement was broken into three issues that were addressed as follows:

Issue 1. How do fusion, automation, and integration enhance force protection in an operational context?

The significant force protection enhancement concerning fusion was the implementation of the DFE during IA-4. The DFE is a command and control (C2)/common operational picture (COP) display system that fused multiple pieces of information. This reduced nuisance alarms and irrelevant detections and considerably uncluttered the COP, enabling greater confidence in the system. The battle captain was able to focus on fewer, more relevant detections and employ assets sooner than without the DFE. Consequently, standoff distances increased for detecting, assessing, and defending against a threat to the base defense operating center. The ability to fuse information with the DFE resulted in better situational awareness/situational understanding and more proactive, informed decisions.

The key automation contributions were the ability to automatically track targets through slew-to-cue assessment cameras and to send the UGVs on preplanned navigation routes. These improvements decreased operator workload for tasks such as path/route planning, sensor automated missions, and UGV sentry modes, allowing operators to focus on reconnaissance or surveillance. While the number of tasks steadily increased through IA-4, manpower requirements actually decreased because 95 percent of the added tasks were successfully automated.

The integration of new systems was successfully completed by the end of IA-3 with the exception of the CBRNE UGV and the unmanned aerial system. The final IA integrated 28 different subsystems consisting of 148 total individual sensors or components, at three geographically separate locations. Establishing and adhering to a common interface language requirement ensured that the technologies worked within the digital architecture of the experiment. Technologies that were not fully integrated with the C2 system were difficult to keep track of and quickly lost value on the battlefield. Additionally, the operator stations were interchangeable, which allowed operators to share the workload and ultimately reduce manpower requirements without compromising the effectiveness of the system.

Issue 2. What technologies can potentially support the IUBIP capability gaps?

The IUBIP CBA process identified a number of mission tasks for each of the DAWDR functions, and each of the mission tasks was broken down into attributes. The FPJE identified capabilities that can accomplish 83 percent of the detect attributes, 60 percent of the assess attributes, 50 percent of the warn attributes, and 44 percent of the defend attributes . The recover function was not covered within the experiment.

The use of UGVs improved situational awareness by augmenting camera and radar surveillance and conducting close reconnaissance, reduced security force patrolling requirements by minimizing the need for manned patrols and checkpoints, and limited exposure of friendly personnel to hostile action by patrolling and challenging intruders.

An independent assessment of the FPJE capabilities was conducted by the United States Army Test and Evaluation Center (ATEC), Alexandria, Virginia. Capabilities were assessed with a focus on risk to the JFPASS JCTD as defined by a semifixed/expeditionary location primarily in the United States European Command area of responsibility, but with consideration to the United States Central Command area of responsibility. Overall, the majority of the systems in place during IA-4 are considered operationally suitable in the JCTD environment. Generally, the sensors were assessed as *low risk* to the JCTD, with the exception of the CBRNE sensors, the UGVs, and the UAV. The nonlethal UGV was assessed as *medium risk* to the JCTD, while the lethal UGV was assessed as *high risk* due to the system's lack of technical maturity. The UAV was assessed as *high risk* due to its lack of full integration into the FPJE system. Figure 3, page 24, depicts the overall assessment of the FPJE capabilities against the force protection functions pertinent to the FPJE.

Capability Bin	DETECT	ASSESS	WARN	DEFEND
FPJE System	G	G	A	G
C2/Fusion Engine	A	A	R	G
UAVs	A	N/A	N/A	N/A
CBR Sensors	R	R	R	N/A
UGVs	G	N/A	N/A	N/A
Optical Systems	G	N/A	N/A	N/A
Radars	G	N/A	N/A	N/A
Unattended Ground Sensors	G	N/A	N/A	N/A
Maritime	G	N/A	N/A	N/A
Miscellaneous	N/A	N/A	N/A	N/A
KEY				
G	Demonstrated capability during the FPJE			
A	Demonstrated capability with significant shortfall			
R	Not successfully demonstrated			
N/A	Not applicable to a particular capability			

Figure 3. ATEC assessment of FPJE capabilities

Required Capability	Ideas for Materiel Approaches in the Near Term (Present to 2018)
2. Ability to provide detected activity (information) that is mutually supporting (provide to, accepted from, used) across Services and agencies regardless of format.	Integrate system of systems to track all threats (standardized, deployable, bundled package of sensors).
	Establish communication and sensor systems that are synchronized and linked.
	Enhance real time, common tracking, and management tool for air, ground, and sea threats.
	Establish joint sensor network.
	Integrate existing detection sensor architectures to provide standardized equipment and procedures.
4. Ability to share information among ground, air, and sea forces.	Integrate existing architecture to provide fused information from a single node.
	Integrate existing architecture/systems used to gather independent information to provide a relevant common operational picture.
5. Ability to integrate sensing capabilities to send, receive, and exchange data across Services and agencies.	Integrate "like" tracking capabilities into one node.
	Integrate "like" sensor capabilities into one sensor.
8. Ability to link (share) resources across Services and agencies.	Create hardware decision support system for gathering independent information.
	Select/leverage best existing detector/sensor architecture to support standardized equipment and procedures.
10. Ability to enable defensive operations across the Services and agencies.	Integrate existing architecture/systems to display ground, sea, and air common operational picture.
	Select/leverage best existing architecture to manage ground, sea, and air defense capabilities and resources in a single situational awareness application.
11. Ability to provide information to enable the commander's decision-making ability across the Services and agencies.	Leverage existing systems and databases with the ability to analyze information and provide real-time feedback.
	Create an architecture managing ground, sea, and air defense capabilities and resources in a single situational awareness application.

Figure 4. Required capabilities with solutions for materiel approaches

Issue 3. Are the operational insights from the FPJE events consistent with the IUBIP CONOPS?

The FPJE events were primarily conducted according to the detect, assess, and defend functions of the IUBIP CONOPS. The goal of the IUBIP CONOPS is to better equip the joint forces to perform the detect—or "see first"—function first. It can be shown that the emplacement of the integrated FPJE system and the CONOPS within the parameters of the FPJE construct correlate to an improvement in the detect function, thereby contributing to fulfilling the identified requirements in the IUBIP CONOPS.

Overall, the integrated system proved very successful in recognizing, classifying, and identifying data and information for the assess function. This enabled a superior understanding of developing situations and allowed the battle captain to determine intent, formulate correct procedures, and execute appropriate courses of action before the enemy could successfully carry out hostile intentions. These actions fulfilled the "understand first" goal of the IUBIP CONOPS.

With the integrated system and the added DFE capabilities acting in concert throughout the detect, assess, and defend functions, the base defense operating center was successfully defended against insurgent attacks by enabling the Soldiers to "act first" and "finish decisively." With further development of standing operating procedures, TTP, and DFE technology capabilities, the system will continue to improve force protection effectiveness.

Interoperability

Interoperability was determined to be the highest priority attribute, spanning all DAWDR joint functions, and was therefore

the focus of the first IUBIP functional solutions analysis (FSA). The interoperability FSA led to the development of an initial capabilities document (ICD) that identified 11 required capabilities that will address IUBIP shortfalls related to the interoperability of associated DAWDR subtasks. The FPJE addressed several of these required capabilities and provides a potential solution for a number of materiel approaches from the ICD as identified in Figure 4. There is also a good relationship between the demonstrated FPJE capabilities and the second IUBIP FSA (still in draft form), which addresses the detect, assess, and defend shortfalls and potential materiel solutions. The FPJE did not look at the capabilities needed to address inter-Service and interagency interoperability issues, but did provide the basis for a path forward during the JFPASS JCTD to begin to address those issues.

Conclusion

The FPJE was a tremendous success on many fronts. The results from the experiment will serve the overall force protection community in developing both materiel and nonmateriel solutions to semifixed site identified force protection shortfalls. The FPJE successfully—

- Reduced risk for the JFPASS JCTD by exercising technologies that demonstrated the potential for effectiveness in the JCTD operational environment.
- Informed the IUBIP CBA process by demonstrating progress toward meeting the defined shortfalls.
- Evaluated the impact of fusion, automation, and integration.
- Advanced the development of joint force protection CONOPS, capability requirements, and technical solutions.

The FPJE integrating assessments studied a number of technologies and capabilities that collectively demonstrated an increase in situational awareness and a decrease in workload for the base defense operating center staff. The success of the exercise proved that fusing information (not just data), automating optical detection, and integrating on the COP are key contributors toward enhancing force protection.

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The author gives a special acknowledgement to Major Jackquiline Barnes, Assistant Product Manager, Force Protection Systems, Fort Belvoir, Virginia, for her contributions to this article.

Endnote

[1] Department of Defense, "Protection Joint Functional Concept," p. 4, 31 December 2003.

("Concept Capability Plan," continued from page 15)

means by which maneuver support elements directly and indirectly contribute to optimized movement and maneuver through their direct actions in the physical operational environment and their support to IE. It will show how the reinforcing capabilities of engineer, military police, CBRN, EOD, civil affairs, and other elements directly support movement and maneuver through reducing, removing, neutralizing, rendering safe, or mitigating explosive or nonexplosive obstacles and hazards. The CCP will describe support to ground and aviation transportation infrastructure in support of maneuver. It will also describe the means by which the results of the physical activities of maneuver support elements, both in combat and noncombat missions, are best translated through the use of IE into messages intended to minimize adversarial activity within the area of operations.

The maneuver support CCP will also describe a set of capabilities necessary for future maneuver support forces and to meet continuing needs already identified in the FY 2010 – 2015 Capability Needs Assessment. These capabilities, if achieved, will enhance ISR and physical mission accomplishment, whether conducted on-site by live personnel or by teleoperated or autonomous robotic platforms. Other needed capabilities include the means to actively and passively detect, destroy, or neutralize explosive hazards at standoff distances and at tactical speeds; the means to rapidly cross gaps and enable movement across complex terrain; and the means to deny adversaries the ability to move or maneuver. Additional capabilities will include means for safely and rapidly managing populations and neutralizing adversaries with nonlethal means. The force will require capabilities that enable safe, remote mitigation of large- or small-scale CBRN hazards and to deliver tailored and persistent IE messages to any target audience. Other solutions in leader development, personnel, and facilities will further support this concept.

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Endnotes

[1] JP 3-41, *Chemical, Biological, Radiological, Nuclear, and High-Yield Explosives Consequence Management Joint Operating Concept,* 2 October 2006, page vi.

[2] JP 1-02, *Department of Defense Dictionary of Military and Associated Terms,* as amended through 30 May 2008.

[3] FM 3-0, *Operations*, February 2008.

Portions of this article were extracted from the Maneuver Support Concept Capability Plan version 0.3.

Military Working Dogs *Then* and NOW

By Ms. Kristie Jeannette Walker

Operation Iraqi Freedom and Operation Enduring Freedom have prompted the United States to develop and procure many types of gear to detect improvised explosive devices (IEDs). Most of the development has centered on advanced technology and sophisticated equipment, but one resource that has existed in our inventory for years—and has often been overlooked as an effective IED-defeat device—is the military working dog (MWD).

MWD History

Although the U.S. military has had MWDs since 1942, they have been largely underutilized in combat operations. MWDs have a distinguished place in our history, and their contributions to past and present conflicts have proven invaluable. Despite devoting every available resource to the effort, we have yet to duplicate the canine's keen sense of smell, hearing, and sight through modern technology. The basic abilities of MWDs have remained consistent, and recent training enhancements have helped develop and maintain their effectiveness. Today's MWDs closely resemble those of the past, and we find ourselves facing the same challenges as our honored veterans. A brief look into our history will show how we can take lessons learned to effectively integrate this battle-proven technology into today's contemporary operating environment.

World War II Roots

Shortly after the attack on Pearl Harbor, the Army's so-called K-9 Corps began with the Quartermaster Corps in March 1942. The Quartermaster Corps trained dogs and the Soldiers who were their handlers and was responsible for the first Army doctrine

Left: A military working dog and his handler in Vietnam.

Above: The combat tracker team works in II Corps during the Vietnam War in 1967.

on MWDs—Technical Manual 10-396, *War Dogs,* published on 1 July 1943. This doctrine primarily addressed the basic care and training of war dogs and did little to outline limitations in areas of employment. By 1946, more than 10,000 dogs had been trained for duties including mine detection, messenger, and scout/patrol, though it is estimated that 9,300 of these dogs were trained for sentry duty. In 1943, the use of MWDs shifted from sentry use in a garrison environment to tactical use in combat. The first experiment conducted by Army ground forces was in the South Pacific. Eventually, 15 war dog platoons were stood up, and more than 400 dogs saw duty in the Pacific and in Europe. At the end of World War II, training of all MWDs ceased, with the exception of sentry dogs.

Photo by Specialist Aubree Rundle

A Soldier hooks the hoist harness to another Soldier and his military working dog.

Vietnam Lessons Learned

In 1961, the capabilities of dogs in tactical operations was explored again and the Vietnam War became (and remains) the largest deployment of MWDs. It is estimated that more than 4,000 dogs and 10,000 handlers across the Services were employed. The lessons learned from these MWDs and their employment could prove significant in avoiding similar obstacles and maximizing the effectiveness of this resource as once again the U.S. military shifts to the tactical use of dogs.

Sentry dogs provided a great psychological deterrent and were extremely effective in military police operations. However, one of the most important lessons learned was that the effectiveness of the sentry dogs was greatly affected by the length of time that a handler was assigned to the same dog. The performance of a sentry dog was impaired immediately when reassigned to a new handler. Also, many dogs died from heat stroke due to lack of proper acclimatization to their new environment. All four Services employed sentry dogs throughout the conflict, but their capabilities were not clearly understood and their employment considerations were never clearly defined. Too often this led to breaches in security and left bases open to attacks.

The first major tactical deployment of scout dogs in Vietnam provides lessons learned that—if applied today—could still prove valuable to today's MWD program. The lack of doctrine outlining the effective employment of this new combat capability proved to be significant. The commanders' lack of understanding of the proper employment of the scout dog teams and their capabilities and limitations limited the effectiveness of the teams. Because the 21 scout dog platoons deployed to Vietnam were assigned on an "as needed" basis, the teams were unable to train with the organizations they were assigned to. Lead time was minimal, which made effective support of these units difficult at best.

Training was modified throughout the war to minimize some of the anticipated difficulties dogs would face in combat. A simulated Vietnamese village was built at the training center and populated with small farm animals and artillery simulators to mimic the distractions the dogs would face in combat.

The dog program was strictly voluntary and the Army faced many personnel challenges throughout the conflict. It was difficult for the limited number of handlers to meet the

Soldiers lower a military working dog from a medical evacuation helicopter.

increasing demand for dog team support. It was imperative that the volunteers have an appreciation and affection for the dogs if the teams were to maximize effectiveness. An additional personnel issue was the lack of experienced instructors. The program grew at an accelerated rate, which made it difficult to ensure quality instruction. It was also noted that the most effective handlers and instructors were those who either had previous combat experience or had been in a military occupational specialty (MOS) that directly supported combat tactics, techniques, and procedures.

Dog team performance was also directly related to the ability of the handler to interpret every nuance of his dog's behavior. If a new handler was assigned to a dog, this lessened the team's performance and reliability. You could teach an old dog new tricks, but could not teach a new handler old behaviors. The importance of determining the type of dog needed to meet mission requirements was also a valuable lesson. It was imperative to select the proper breed for the training it would receive and the environment where it would be deployed.

DOTMLPF Issues Today

Many of the lessons learned noted above have been identified as doctrine, organization, training, materiel, leadership and education, personnel, and facilities (DOTMLPF) concerns in the ongoing assessment of today's program. From the Gulf War to the present, we have not strayed far from history. Our combatant commanders are requesting the acute capabilities of today's MWD teams to serve various roles to support the full spectrum of operations. We have continued to develop "new" dogs whose abilities closely resemble those that have been useful throughout history. Several problems encountered across the DOTMLPF spectrum during the Vietnam War have also been identified today. The United States Army Maneuver Support Center (MANSCEN) at Fort Leonard Wood, Missouri, is currently working on a capabilities-based assessment of the MWD program, addressing many of these concerns and looking for enduring solutions.

Doctrine. The current doctrine that addresses the capabilities and management of this valuable asset resides with the Military Police Corps. Our current operational tempo (OPTEMPO) has led many units throughout the Army to evaluate the MWD capability and determine their requirements based on individual mission sets. Doctrine needs a revision to provide an enduring solution for all facets of MWD employment. Doctrine is being reviewed to address the expanded list of capabilities, as well as employment across the full spectrum of operations, because teams will work in many environments outside of garrison.

Organization. Organization has multiple facets that need to be explored, and the policy on the assignment of handlers to the units they support should be revised. Military police teams should be deployed as detachments with either a kennel master, training noncommissioned officer, or senior MWD handler. The MWD leaders and handlers understand the capabilities, limitations, and requirements for all facets of employment. Deploying MWD assets in small groups or organizations would enable the teams to be better supported by the assigned unit and help them be

> ***"Many of the capabilities that we seek today have been used in different capacities throughout history."***

maintained and used to their maximum potential. There is also an increasing demand for dog teams from engineer, infantry, and special operations forces, which are beginning to see the added value that this capability brings.

One could argue that Soldiers who work with MWDs should have their own MOS. Another lesson learned from our past clearly demonstrates the special skills a handler must possess and the benefits that the handler's experience brings to ensure mission effectiveness and proper employment. One possible solution would be to convert dog handler positions to warrant officer slots. This could also keep experienced handlers in their positions and retain valuable institutional memory.

Training. Training today is constantly being adjusted, as it was during the Vietnam War. However, today's problems are much the same, as we once again deploy teams for tactical use. MWDs still face the challenge of becoming acclimated to their environment and ignoring the distractions of a combat zone. The current OPTEMPO is also placing significant strains on personnel when trying to identify qualified handlers and instructors with theater experience. The immediate fielding of new canine capabilities has also led to larger gaps in experience between senior handlers and kennel masters and newly certified handlers. A longer period of time between initial certification and deployment could help new handlers become more familiar with the nuances and change-of-behavior patterns of their assigned dog, which could improve team effectiveness. This knowledge and advanced handling skill is imperative in combat operations. Deployed handlers should be able to reach back to a more experienced Soldier in order to identify performance problems or training solutions to maintain the team at a high level of performance.

Materiel. Materiel issues that are significant in today's MWD program do not come as a surprise. The procurement and acquisition of the right breed of canine still remains an issue. The dogs undergo rigorous training and must have an innate ability to learn the tasks at hand. These are abilities found only in dogs of the highest breed standard and genetic makeup. Today's operational environment is much different from that of the past, which has led to equipment shortfalls and the need to develop new scent kits. The equipment is necessary for optimum care and maintenance of this capability, and the scent kits are imperative to maintain the reliability of the MWDs. MANSCEN is pursuing the acquisition of such kits, as well as other equipment to enhance the deployment and execution of the team's mission. The United States Army Veterinary Service is also working closely with MANSCEN to identify and equip teams with much-needed chemical, biological, radiological, and nuclear protective measures and expanded first-aid kits for the operational environment.

Leadership and Education/Personnel. Today's leaders and handlers face the same challenges as their predecessors. Handlers must be able to brief commanders on the capabilities and limitations of the team. Leaders at all levels in the Army should be better educated about the availability of MWD teams and the benefits this additional resource provides. They should also be educated on a team's capabilities and limitations, and it is imperative that they are understood before employment. This could be accomplished either by embedding teams into the predeployment training of units, or through the Noncommissioned Officer Education System and advanced officer training course programs of instruction.

Facilities. Some may consider facilities to be a less critical issue in today's program. However, for the handlers and trainers who are dedicated to their canine partners, the quality of facilities ranks among the top concerns. Due to rapid fielding of MWD teams and the ramp-up in production of these teams, some facilities worldwide need improvement. The living and training environment of the dogs is important to their success. These facilities are in immediate need of modernization, upgrade, and expansion.

Summary

At the close of the Vietnam War, it was noted by many that the Army should maintain an active MWD program during peacetime. Many of the capabilities that we seek today have been used in different capacities throughout history. Many of the problems identified in the DOTMLPF domains in Vietnam are still prevalent today. The urgent requests for MWDs then and now have once again brought to the forefront familiar challenges and concerns. MANSCEN is analyzing ways to improve this obviously enduring program, hoping to ensure that future generations of MWDs and their handlers are not faced with the same obstacles. The end result will be the sustainment and improvement of this much-needed capability.

Ms. Walker, a former dog handler with the United States Army, also served as a handler-trainer in Calhoun County, Alabama. She is now the action officer for the Military Working Dog Program in the MANSCEN Capability Development and Integration Directorate, Fort Leonard Wood, Missouri, and contracted by Booz Allen Hamilton. She holds a bachelor's in management and a bachelor's in finance from Columbia College.

MEB/BSTB Precommand Course

Maneuver support operations – integrate the complementary and reinforcing capabilities of key protection, movement and maneuver, and sustainment functions, tasks, and systems to enhance freedom of action for the supported force. [1]

—FMI 3-90.31

By Mr. Frank E. Webb and Mr. Robert B. McFarland, Jr.

As the proponent for the maneuver enhancement brigade (MEB) and the brigade special troops battalion (BSTB), the Maneuver Support Center of Excellence (COE) at Fort Leonard Wood, Missouri, is responsible for developing and implementing the precommand course (PCC) for the current and future leadership of these critical support organizations. As of 1 July 2008, the Maneuver Support Center (MANSCEN) has conducted six PCCs. All six incorporated BSTB commanders and three included MEB commanders. Currently, MANSCEN schedules four PCCs per year for BSTB commanders, with two of these— in March and July— incorporating MEB commanders.

While both of these organizations are fairly new, they are currently operating throughout the Army. The BSTB is organic to the heavy brigade combat team (HBCT) and the infantry brigade combat team (IBCT). It is organized "*to provide the BCT with command and control of the brigade's companies and smaller attachments that formerly operated under the direct supervision of the BCT. It uses its own organic assets to provide command and control (C2), administrative, and sustainment support to organic and attached combat support units.*"[2] The BSTB organic units provide the BCT commander with capabilities and expertise that can be found at MANSCEN, which includes chemical, biological, radiological, nuclear, and high-yield explosives (CBRNE); engineer (IBCT only); and military police. Additional capabilities include military intelligence and communications support.

Command of the BSTB is coded as 01A, meaning that any qualified officer can command it. While this opens up command opportunities for those qualified officers, it brings with it the requirement to fully understand the capabilities of the BSTB organic elements and of those units that may be attached or assigned to the BSTB for specific missions.

Graduation photo from the MEB/BSTB Precommand Course, Class 004-08

The ability to integrate these diverse capabilities and the inherent responsibility of providing the leadership for this type of organization requires a commander with a skill set that isn't provided through normal branch channels. The requirement for the PCC is to provide these commanders with the most current information available at MANSCEN concerning the BSTB and to coordinate with other COEs to provide subject matter expertise that MANSCEN does not possess.

The MEB is designed primarily as a C2 headquarters with a robust multifunctional staff. The current plan will see the creation of 23 MEBs by fiscal year 2012. Of the 23 MEBs, 4 will reside in the Active Army and 19 in the Reserve Component (3 in the United States Army Reserve [USAR] and 16 in the Army National Guard [ARNG]). "*As one of the five multifunctional support brigades, the MEB is designed first to support division operations, but also echelon above division operations within Army, joint, and multifunctional C2 structures, as well as responding to state or federal authorities as part of civil support operations.*"[3]

Although primarily designed as a C2 organization, the MEB does possess organic units that include a headquarters and headquarters company (HHC), a network support company (NSC), and a brigade support battalion (BSB). Key to its staff organization is its functional operations and planning cells. These include CBRNE, engineer, and military police cells. It has additional capabilities among its staff that are critical for mission accomplishment. The fires cell, area operations section, and airspace management section provide the MEB with an increased capability that allows it to be assigned an area of operations. The MEB is task-organized to perform assigned missions. Those missions will vary by theater and are subject to the requirements of the organization it is tasked to support.

Command of the MEB is coded as 01C, meaning that command is limited to CBRN, engineer, and military police officers. Other critical positions within the MEB reserved for 01C officers are deputy commander (LTC), executive officer (LTC), S-3 (LTC), and operations officer (MAJ). These officers are provided with a large staff that varies in its capabilities and skills. As with the BSTB, but to a much greater extent, the ability of the MEB to accomplish its mission rests with the commanders and their ability to lead, integrate, and synchronize the various assets available. The MEB commanders must fully understand not only the tactical level fight they are supporting but also how its execution at the operational level contributes to the theater commander's intent to accomplish the strategic mission assigned.

MANSCEN's responsibility to arm the MEB commander with the knowledge required to succeed in the current fight is not limited to its in-house expertise. Whereas MANSCEN can and does provide these commanders with the latest doctrine and branch expertise available, it also goes beyond the Maneuver Support COE to bring in the additional expertise required. This is a nonstop effort that continues to harvest subject matter expertise from across the Army, its COEs, and combat training centers (CTCs).

The current MANSCEN BSTB/MEB PCC is a two-week resident course that requires the students to do preparatory work via an existing, but still developing, distributed learning (dL) phase website. The MANSCEN BSTB/MEB Community of Practice website not only provides PCC students with preparatory materials but also provides them with a reachback capability once they depart. Those seeking information regarding the website may contact the PCC manager at (573) 563-5502 or <*frank.e.webb@us.army.mil*>. The dL phase includes viewing various videos that include former BSTB commanders discussing their tenure as commanders, reviewing the latest BSTB and MEB doctrinal manuals, reviewing articles related to maneuver support, and other relevant information specific to the BSTB and MEB.

The two-week resident phase consists of a series of seminars, focused presentations, and round-table discussions that are designed to provide the students with the most current information available on the BSTB and MEB, as well as the functional brigades with which they integrate. It includes presentations by the MANSCEN school commandants, the Combined Arms Center (CAC), CTCs, other COEs, and former BSTB/MEB commanders and also includes various tours and demonstrations of MANSCEN branch capabilities.

MANSCEN continues to build and enhance its PCC program, based on the feedback it receives from the students, to ensure that it is meeting their expectations and requirements. Former students are asked to stay engaged via the MANSCEN BSTB/MEB Community of Practice website that is available to them and provide their counterparts and successors with their own lessons learned and insights into command of the MEB and BSTB.

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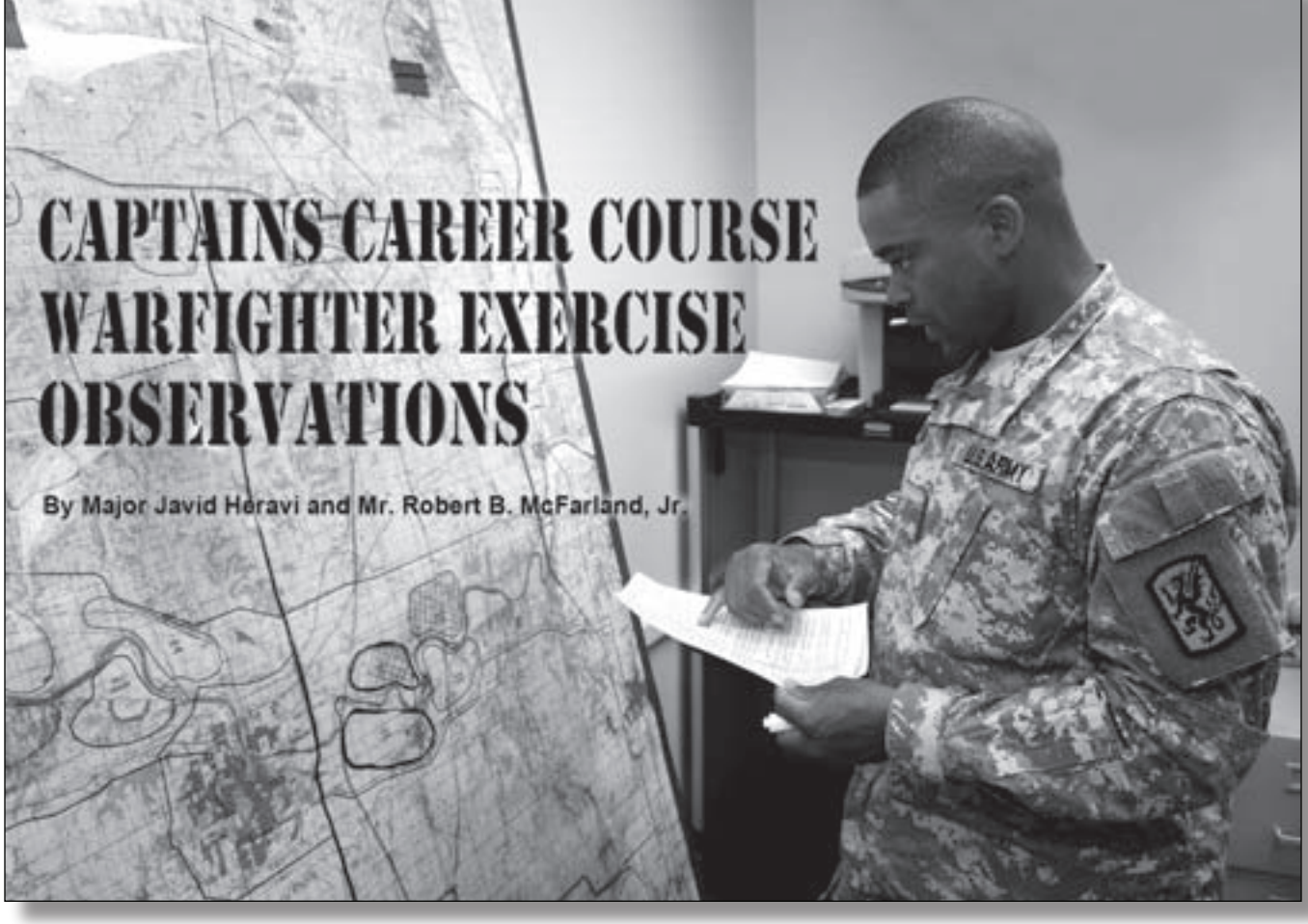

CAPTAINS CAREER COURSE WARFIGHTER EXERCISE OBSERVATIONS

By Major Javid Heravi and Mr. Robert B. McFarland, Jr.

As a member of the Army National Guard maneuver enhancement brigade (MEB) staff support team, I recently had the opportunity to observe Captains Career Course (CCC) students during the five-day capstone Warfighter Exercise. During the exercise, students fill positions as either a commander or staff officer of a brigade combat team (BCT) or MEB. I have observed two MEB staffs during separate Warfighter iterations, one Active Army and one Reserve Component. While observing the MEB staffs during the military decision-making process (MDMP), I have noted strengths and weaknesses common to both iterations. However, each CCC class is unique, and two iterations do not indicate a trend. I merely wish to share my observations and encourage others to observe, participate, and share their findings as well.

Mission Analysis

Determine Specified, Implied, and Essential Tasks. Students readily identify specified tasks within the base operations order (OPORD) and applicable annexes and do a remarkable job of identifying implied tasks. Moreover, students understand the purpose for the tasks. In some cases, MEB staffs do not yet understand the doctrine behind certain portions of these specified and implied tasks, while in other cases the doctrine is in the developmental stage. Regardless, the MEB staff struggles to provide a sufficient solution for a difficult tactical problem. Specifically, the MEB intelligence officer (S-2) needs to better refine the threat and its intentions. Likewise, the operations officer (S-3) needs to better understand the threat and its impact on selected courses of action both at the tactical level and, to an extent, at the operational level, thereby allowing the MEB commander to apply effects in a much more focused manner.

Course of Action Development

Analyze Relative Combat Power. The MEB staff does not sufficiently understand the enemy and terrain and therefore limits its ability to divide the tasks into executable portions for company-size units. Conducting a thorough relative combat power analysis can be difficult to grasp and understand, but is essential in course of action (COA) development. CCC students readily apply doctrinal rules of thumb and, with the assistance of the S-2, the MEB staff understands how and when to make minor or major adjustments to the planned capability. However, the MEB staff does not sufficiently break down tasks and associate them with terrain, resulting in a failure to understand execution through time and space.

Array Initial Forces. A failure to understand the threat through time and space results in the inability to effectively array initial forces two levels down. In the Warfighter Exercise scenario, the MEB conducts maneuver support operations along two main supply routes and four alternate supply routes of significant length. Both S-2s templated enemy positions in the area of operations (AO), but did not identify specific areas along the routes where certain enemy tactics, techniques, and procedures were more likely to occur. As a result of this faulty analysis, the S-3 never considered where small arms fires, indirect fires, or improvised explosive

devices (IEDs) were likely, and therefore did not task units able to mitigate the likely threat. A natural outcome for this error in MEB planning would be that route clearance capabilities are not focused against probable IED emplacement areas, military police capabilities are not focused on areas with templated Level II threat units, and chemical decontamination capabilities do not deploy in the vicinity of all chemical weapons storage points.

Task Organize and Assign Headquarters. Functional chemical, biological, radiological, and nuclear (CBRN); engineer; and military police battalions were not adequately task-organized nor assigned operational areas that would allow them to effectively accomplish their mission. One MEB staff assigned functional battalions an AO, but provided no means through task organization of accomplishing tasks suitable to the capabilities best performed by another branch; the other MEB staff assigned no subordinate AOs within the MEB AO, and the three functional battalions operated freely within the MEB boundaries.

Course of Action Analysis

Both MEB staffs selected the box method of wargaming. As neither staff was able to effectively visualize the threat through time and space, this method should have shown the shortcomings in understanding the threat. However, wargaming relies heavily on doctrine, judgment, and experience. In both cases, the MEB S3 failed to select a small enough area for concentration. As a result, the MEB staffs were unable to analyze their plan in sufficient detail.

Summary

While a comparison between CCC students and the capabilities of an MEB staff may be subject to ridicule, there are lessons to be learned from observing staff processes in any environment. The MEB is designed with a robust staff fully capable of analyzing the threat and developing solutions to neutralize or defeat it. It is also composed of a much more senior staff. However, like the CCC students who are brought together shortly before exercise execution, many MEBs are newly formed and their staffs have not had the opportunity to fully exercise themselves as an MEB in a Warfighter-type scenario. Two CCC classes have shown that a failure to focus the efforts of the staff in a synchronized and coordinated manner may result in any organizational staff encountering some of the same shortcomings experienced by the CCC students during their Warfighter Exercise.

Despite the shortcomings I have identified, the CCC students did prove their mettle throughout the exercise. Both the student commanders and their staffs performed remarkably well in a challenging environment. They were able to rapidly form a skeleton MEB staff, analyze a division OPORD, conduct MDMP, and develop—and then execute—their plan within a five-day period. As a capstone combined arms staff exercise, both the Warfighter Exercises and the students involved were successful.

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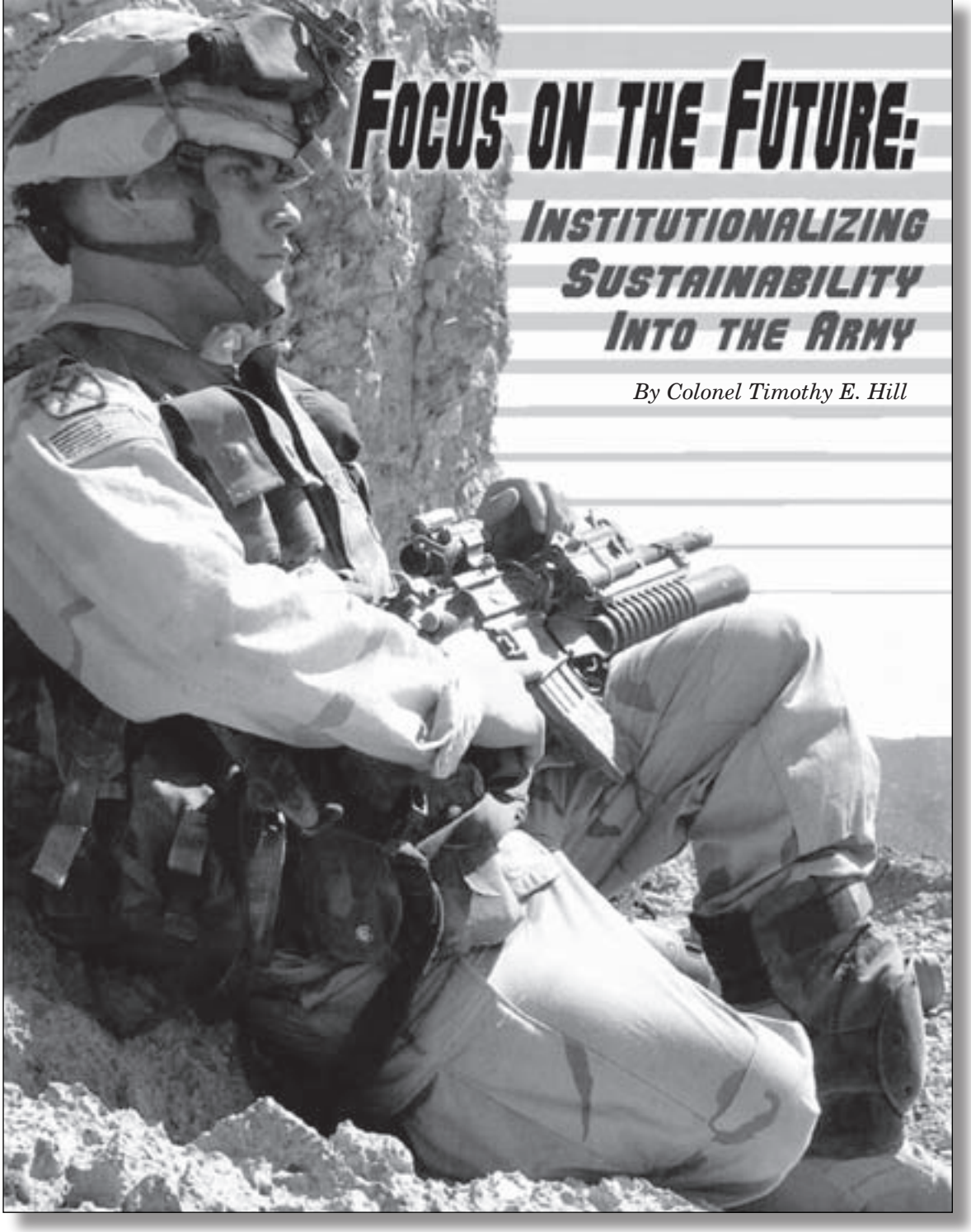
Warfighter XIII



Focus on the Future: Institutionalizing Sustainability Into the Army

By Colonel Timothy E. Hill

One hundred years from now, when the Army's senior leaders reflect on how well the Army of 2008 coped with its challenges across the globe, will they conclude that the Army succeeded by adopting a strategic vision that included sustainable development?[1] The answer should be in the affirmative.

Sustainable development owes its understanding to the concept of sustainability, which is defined as meeting present needs without compromising the ability of future generations to meet their own needs.[2] In other words, it means not squandering, depleting, or abusing the earth and its resources, but enhancing, enriching, and preserving them.[3] An Army that focuses on sustainability is an institution that seeks to maintain its organizational vitality and recognizes and values its stewardship responsibilities. Thus, institutionalizing sustainability through education and making it an integral feature of military operations will not only facilitate its introduction into Army culture but makes eminent sense for mission success as well.

Defining Sustainability

The term sustainability can be confusing to some in the Army because it sounds similar to other frequently used Army terms such as sustainment or stability. Sustainment is the provision of logistics and personnel services required to maintain and prolong operations until

successful mission accomplishment.[4] Logisticians discuss sustainment issues to keep the force supplied and ready. Stability operations, on the other hand, is the Army's all-encompassing doctrinal term for peacekeeping or peace enforcement. Stability operations are related to missions such as humanitarian and civic assistance, counterterrorism, counterinsurgency, and counter-drug efforts.[5] The Department of Defense defines stability operations as the military and civilian activities conducted across the spectrum from peace to conflict in order to establish or maintain order in states and regions.[6] This term describes where military forces may be employed to restore order and stability within a state or region where competent civil authority has ceased to function. These forces may also be called upon to assist in the maintenance of order and stability in areas where they are threatened, where the loss of order and stability threatens international stability, or where human rights are endangered.[7] Sustainment and stability operations produce results in the short-term while sustainability, in contrast, requires future thinking and a systems approach to provide long-term strategies and solutions for current and future challenges.

The Army defines sustainability as a comprehensive systems approach to planning and decision-making designed to sustain the natural infrastructure, which includes the land, water, air, and energy resources required to conduct our mission.[8] The Army Strategy for the Environment notes that sustainability benefits from the interrelationships of the triple bottom line of mission, environment, and community.[9] Yet, sustainability has other salutary features.

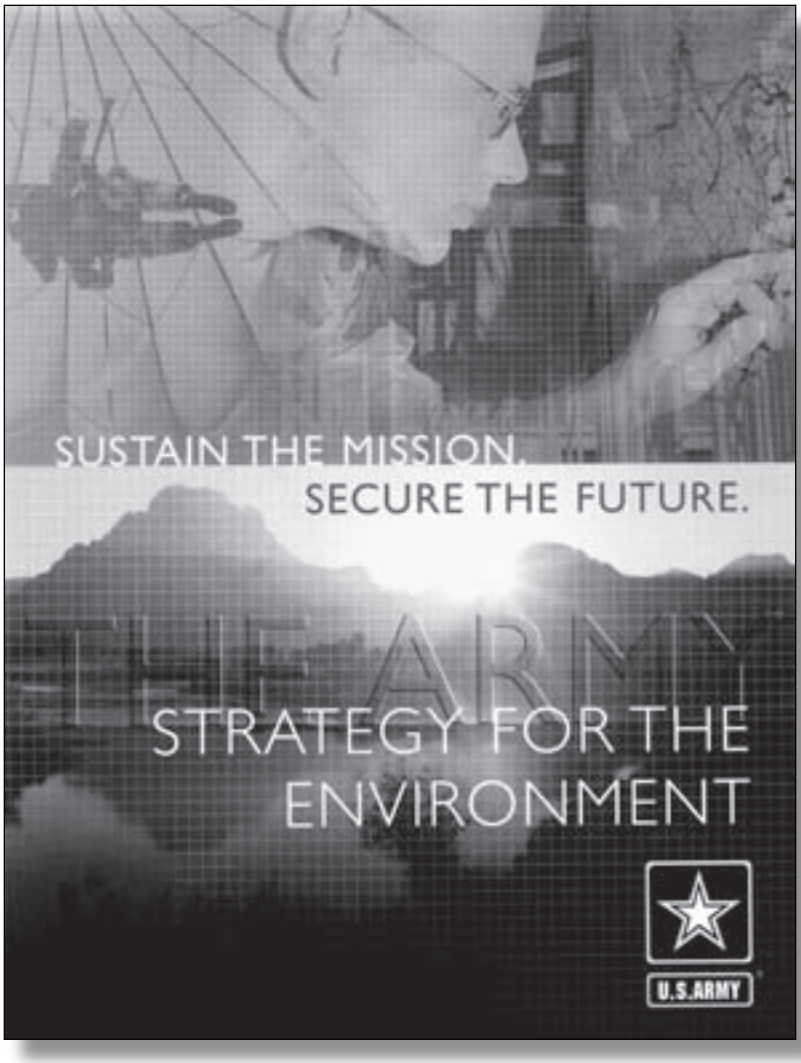
Sustainability, for example, expands the traditional military concept of stability[10] by requiring planners and operators to consider societal and environmental factors[11] during stability operations. Sustainability also can enhance military operations through base operations by providing more flexibility, reducing the logistics tail, and providing greater freedom for independent action for U.S. forces.[12] Additionally, reducing the logistics tail can reduce reliance on contractors by eliminating demands on the local infrastructure and environment. In overseas operations, reducing the number of contractors and logistics requirements reduces overall operational security requirements, thereby lessening costs and the likelihood of U.S. forces being injured, killed, or kidnapped. Lastly, sustainability addresses other deleterious effects of military operations. For example, drawing utility services such as power, water, sanitation, and waste management; labor; materials; or other resources from the local environment can cause resource shortages, inflation, social dislocation, and disruption of local economies.[13] Thus, attention to sustainability is the means by which the Army can enhance its capabilities in several mission dimensions—facilities management, combat operations, and nation building. So how does the Army get there? There are numerous paths, but one area to consider is education in both the formal education system and the operational environment.

Educating the Force

Educating the force can originate in the Army education system, but this is not the only place a Soldier will learn about sustainability. For example, the use of operations orders can help a Soldier learn about sustainability by the tasks the commander implies or specifies within the mission. The application of the officer evaluation report (OER) system is another method to enhance learning about sustainability, because the Soldier will be evaluated on the task. Soldiers can also learn about sustainability through the conservation and recycling practices of the garrison installation.

Nonetheless, institutionalizing sustainability into the Army is the first step to producing a culture that embraces sustainability practices, but this cannot be attained unless changes in strategy and doctrine are examined. "As the Army transforms to a future force with new systems, organizational structures, and new doctrine to achieve full-spectrum operational capability, our training enablers and infrastructure, along with realistic and relevant training venues, must continue to be readily available to match the timelines we have established to field the future force—one comprised of highly trained Soldiers poised to fight new and different kinds of conflicts while maintaining traditional warfighting skills."[14] This statement represents a rallying cry for the Army to address sustainability as a way forward. Training, training venues, and infrastructure changes are but a piece of how sustainability can be managed within the framework of education.

Institutionalizing sustainability into the Army requires the efforts of the United States Army Training and Doctrine Command (TRADOC). TRADOC states that it is the architect of the Army and that it "thinks for the Army" to meet the demands of a nation at war while simultaneously anticipating solutions to the challenges



Cover of *The Army Strategy for the Environment*

of tomorrow.[15] TRADOC can integrate sustainability education throughout its Noncommissioned Officer Education System and its Officer Education System. The curricula associated with these systems would introduce sustainability through maintenance training programs, weapons systems training, and training environments that simulate combat conditions to instruct students how to use sustainability practices within base camps. The school environment itself could help teach sustainability practices. As an example, the United States Army Engineer School can educate its students in sustainability by teaching them how best to use the land and natural resources where operations and training occur, thereby minimizing damage to the environment while protecting the land and its resources for the future. Another potential mode is to use training scenarios that include societal and environmental drivers and variables, such as the impact of prolonged regional drought on social stability and well-being, the possible destabilization of society through human migration, and the preventive measures that could forestall adverse results.

Sustainability could be institutionalized the way risk management was institutionalized into the Army. Risk management was introduced as a safety program to reduce the number of accidents that Soldiers experienced during training and military operations. It accomplished this aim by helping Soldiers understand how an accident could occur and instructing them on ways to minimize the probability of an accident or prevent it altogether. Risk management is the process of identifying, assessing, and controlling risks arising from operational factors and making decisions that balance risk costs with mission benefits.[16] Army leaders integrate risk management into their mission planning to anticipate safety hazards, establish preventive control measures, and require annual training.

Education on sustainability can be included in mission planning for both training and operations, as was the case for risk management. Commanders at every level can introduce sustainability considerations into their planning process to mitigate potential hazards, minimize destruction to the land and other natural resources, and reduce risks to animal and human life. Also, a specific annex can be incorporated into the operations order to implement and enforce sustainability measures. As commanders prepare their operations orders, they would use the sustainability annex to help subordinates prepare individual solutions for sustainability, based on their situations.

Another way to educate the force is through the after-action review (AAR) process. The AAR can incorporate sustainability lessons learned from the event so that the participants can learn the positive and negative effects of the operation on the environment. Identifying these effects allows commanders to determine how to change their standing operating procedures to incorporate sustainability practices into future operations.

Another avenue to educating the force regarding sustainability is by addressing it in the OER system. The evaluation requires that the commander conduct face-to-face counseling with subordinate officers as a way to monitor the subordinates' performance. If sustainability is included as a feature of the OER, this will force change within the ranks. At a minimum, the officers and their subordinates will learn about sustainability and figure out ways that produce results. The OER system is an excellent tool for commanders to document innovative ideas that subordinates develop on sustainability. Once the ideas begin to emerge and flow up the chain of command, sustainability practices will be more than just an idea and will be truly instilled into the Army culture.

Conclusion

The Army is transforming its formations to address current and future national security obligations. As the Army transforms, it should educate its Soldiers to incorporate sustainability practices and concepts to fulfill those obligations without undermining the environment or causing unnecessary harm to the societies it is charged to safeguard. Instilling sustainability into Army culture will require constant training, incorporating sustainability practices and concepts into the—

- Army school system.
- Mission training environments.
- Installations, through development of sustainable training areas and resident programs.
- OER system.

Taking such steps will instill the processes needed to educate Soldiers about their responsibility for sustainability. Further, promoting this training will help Soldiers in the future because the demands on them will be even greater as climate change, human migration, and burdens on dwindling natural resources forecast future regional conflict in places where the Army will be deployed to protect our national interests. Thus, Soldiers who are aware of these future demands, conscious of the critical nature of sustainability, and educated to take a systems approach to problem solving will "sustain the mission and secure the future" for the United States Army.[17]

Colonel Hill joined the United States Marine Corps in 1977 and served as an automotive mechanic until 1982, when he joined the Marine Corps Reserves. In 1984 he joined the West Virginia Army National Guard, went to officer candidate school, and received a commission. His experience includes assignments with the Engineer and Military Police Branches. He served in Operation Iraqi Freedom as base defense commander and provost marshal for Camp Anaconda in Balad. In 2005, Colonel Hill was provost marshal during Operation Katrina after Hurricanes Katrina and Rita devastated Louisiana and Mississippi. He is a graduate of the Command and General Staff Officers Course, Combined Arms and Services Staff School, Military Police Officer Advanced Course, and the Engineer Officer Basic and Advanced Courses. He holds a bachelor's in military leadership from the University of Charleston and a master's in adult and technical education from Marshall University. He is a graduate of the Army War College and serves with the West Virginia Army National Guard as Commander, 197th Regiment (Regional Training Institute), Camp Dawson, West Virginia.

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Organizational Leadership at the Battalion Level

By Lieutenant Colonel Laurence M. Farrell

"Get your communications up or you're fired," said the brigade commander. The words stung. As the battalion commander stood in front of the brigade commander, he was deeply disillusioned. The brigade's communications structure had failed during the exercise, and the brigade commander wanted to know why. The battalion commander could not provide an answer. Even worse, he had no suggestions on how to improve the communications structure. He wondered how this had happened. Ninety days ago, he was an engineer battalion commander with technical knowledge in bridging, construction, and demolitions. Since that time, his battalion had converted to a brigade special troops battalion (BSTB) structure, and his technical knowledge of his subordinate commands was nonexistent. As the higher command headquarters of the brigade's signal company, he was responsible for the communications posture of the brigade. He felt mixed emotions. He regretted that he had not created a formal plan to learn more about the communications structures and the capabilities of the signal company. And he was angry that he was being chastised for the exacting details of signal requirements when, as an engineer officer, his knowledge of this area was minimal. Finally, he resolved to fix the structural issues in his battalion that had allowed the situation to happen.

This scenario actually occurred to a commander of a BSTB immediately after it converted from an engineer battalion. As part of the modular force structure, the Army has created the BSTB and the divisional special troops battalion (STB). The BSTBs and STBs usually contain, at a minimum, four disparate units at the company and platoon levels. The following are examples of how they may be configured in the current force structure at the divisional level and below.

- BSTB (military intelligence, signal, chemical, and military police)
- STB (signal, security, adjutant general replacement, tactical command post/tactical operations center [TAC/TOC] support, and the band)

These units require a different leadership style than a combined arms battalion that contains combined arms companies and a similar combat engineer company. For leaders to be more successful at commanding a BSTB or an STB, current leadership doctrine should be fully understood and specific procedures should be followed.

According to Field Manual (FM) 6-22, *"Leadership is the process of influencing people by providing purpose, direction, and motivation, while operating to accomplish the mission and improving the organization."*[1] The Army officially classifies leadership into three levels: strategic, organizational, and direct (see figure, page 39).[2] Each leadership level requires a different leadership focus while upholding the Army's eight core leader competencies and supporting behaviors described in FM 6-22.[3] At the battalion level, in most cases, direct-level leadership is still the preferred method. Most field grade leaders at the battalion level (commander, command sergeant major, executive officer, and operations and training (S-3) officer have always led at the direct level (platoon and company). That direct-level leadership lends itself to "like" units, and a battalion—even in today's modular environment—still has a moderate footprint. It is when the battalion command team leads a unit at the direct level that should be led at the organizational level that structural deficiencies become possible.

Leading at the organizational level is a new and challenging experience for most field grade officers and noncommissioned officers. The Army's leadership manual reflects this challenge by stating that *"organizational leaders generally include military leaders at the* ***brigade through corps levels****"* [emphasis added].[4] The manual also states that "organizational leaders usually deal with more complexity, more people, greater uncertainty, and a greater number of unintended consequences."[5] This article provides a short,

comprehensive list of techniques and focus areas that are effective at the organizational level of leadership and are directly applicable to divisional BSTB and STB commanders, command sergeants major, executive officers, and S-3s. This article also recommends potential solutions the Army can implement on a long-term basis to improve the performance of the BSTBs and STBs.

Organizational-Level Techniques

The following techniques are effective at the organizational level of leadership:

- Understand the technical requirements
- Know the core competencies
- Conduct routine counseling
- Provide a vision

Understand the Technical Requirements

Leaders at all levels must have a basic understanding of the technical requirements of their subordinate units. This is one of the greatest challenges of BSTB and STB field grade leaders, and they often neglect or minimize it for multiple reasons, to include:

- They may discount their role as technical advisors of a battalion-sized element.
- They may think that they do not have time to learn new technical skills.
- They may decide that fully delegating the technical part of their duty performance is acceptable.

These perspectives, though seemingly reasonable, are not in keeping with current Army doctrine. To put it bluntly, leadership requires a technical component. This is clearly stated in FM 6-22: *"Direct, organizational, and strategic level leaders need to know what functional value the equipment has for their operations and how to employ the equipment in their units and organizations. At higher levels, the requirement for technical knowledge shifts from understanding how to operate single items of equipment to how to employ entire systems."*[6]

This paradigm is also reinforced by the guidance given during a recent lieutenant colonel command board. Military Personnel (MILPER) Message 06-210 states that *"officers will be slated per the Army command/key billet guidance prioritizing skills and experience… officers should consider how their skills and experiences best match those commands or key billets available and make preferences that best match their personal desires to where their skills and experiences exist. Officers should focus on specific or like-type units where they have previously served and not necessarily the location."*[7]

The guidance and doctrine are clear. Leadership has a technical component, and it is relevant at the higher command levels. The challenge is to implement a program that trains field grade leaders. At the organizational level, a simple solution is a comprehensive leader development program. The value of a long-term leader development program should not be discounted. A focused program of instruction, with hands-on training with proper training aids, can result in a high degree of technical competency in a relatively short amount of time. The United States Army Engineer School uses this method to teach complex engineering subjects—such as the analytical bridge classification method in the Captains Career Course—to many officers with no engineering experience. This process can be replicated at the battalion level for a variety of topics. Finally, most divisional life cycle units experience their turnover immediately after a deployment and then are refilled and held steady for about three years. This situation further allows the "in-house" training program to be spread out over a longer time period.

Know the Core Competencies

Leaders at the organizational level must focus on the unit's core competencies to have the greatest effect. This dictum has even more relevance if the unit is composed of disparate subunits such as in the BSTB and STB. In a maneuver battalion, with four like subunits, the battalion leadership can choose a variety of military occupational specialty (MOS)-specific tasks to devote training time, energy, and resources. Here, the commitment of resources has an economy of scale and an immediate effect across the battalion. This is not the case in a BSTB or an STB. In them, the battalion leadership usually does not have time to generate multiple distinctive training programs for each company. The essential question is, Where can the battalion leadership leverage their experience to maximize the

Army Leadership Levels (Figure 3-3 from FM 6-22)

> ***"Leaders at the organizational level must craft a vision and consistently reinforce it throughout the command."***

training? Fortunately, the Army provides the answer—the 40 Warrior Tasks and 11 Battle Drills. According to the Chief of Staff of the Army, these Warrior Tasks and Battle Drills "illustrate warrior-focused training" in support of the "long war."[8]

In units such as the BSTB or STB, where there are always competing demands for specific MOS training and combat training, the battalion leadership is critical in providing a balance between these two competing demands. Finally, in focusing on the Warrior Tasks and Battle Drills, the battalion leadership can conduct battalion ranges and minimize risk. The value of this effect cannot be overestimated. Many subunits in a BSTB or an STB have limited exposure to the requirements of live-fire ranges and require battalion-level support to execute the range properly and safely.

Conduct Routine Counseling

In BSTBs and STBs, the battalion leadership must conduct written, deliberate performance counseling "routinely." This counseling requirement has added importance if the units are geographically dispersed—as most BSTBs and STBs are. Though FM 6-22[9] and Department of the Army (DA) Pamphlet 623-3[10] clearly state the Army counseling requirements, many battalion-level leaders and above do not fulfill the requirements according to the regulation. Written counseling is often replaced with verbal counseling that is conducted *ad hoc*. Though verbal counseling can be effective, its application is usually limited to direct-level leadership of like units. For example, it is easier for a maneuver commander to give guidance to a subordinate maneuver unit that needs to improve the company's score on "Table 8 Gunnery" than it is for a BSTB commander to give guidance on a communication problem. Though this might not be "fair," it is the reality.

In units such as BSTBs and STBs, written counseling serves as the intent paragraph similar to the operations order. According to FM 6-22, counseling "communicates standards and is an opportunity for leaders to establish and clarify the expected values, attributes, and competencies."[11] Since the battalion commander and command sergeant major have limited time, exposure, and probably technical expertise, the counseling provides a "compass" for priorities for the long term. This is key for an organizational leader to be effective.

Provide a Vision

Leaders at the organizational level must craft a vision and consistently reinforce it throughout the command. Often a vision is the "shortest leg" and most neglected of the "command triad" (command philosophy, training guidance, and command vision). Unlike training guidance—which must be issued quarterly and validated at the quarterly training brief—there is no defined metric that measures if a unit is making progress toward the vision. Unlike a command philosophy, which tends to be more specific in nature, command vision statements tend to be "nebulous." The result is often a PowerPoint® slide put up in the battalion headquarters and then ignored. The vision, when properly utilized, provides clarity to the command's purposes. It shows junior-level leaders what the organizational long-term goals are in the unit. The vision has added importance in BSTBs and STBs. Unlike a maneuver unit, where Soldiers clearly see that they are part of a larger team working toward common goals, Soldiers in a BSTB or STB may feel that they are operating independently from the other companies in the battalion. An organizational vision serves as a unifying tool that allows Soldiers to see that they have common goals regardless of their MOS.

Army-Level Solutions

Potential solutions at the Army level, such as the following, can improve the performance of BSTBs and STBs:

- Create a DA-certified BSTB/STB field grade leaders course
- Create a BSTB/STB identifier

Create a DA-Certified BSTB/STB Field Grade Leaders Course

The Army should create a field grade leaders course for both officers and field grade senior noncommissioned officers (NCOs) assigned to BSTBs and STBs. Although there is tremendous value in having a functional, enforced officer professional development (OPD) program at the organizational level, there are limitations to this approach. Similar to most units, personnel will have competing demands on their time, all units are susceptible to last minute requirements and, most importantly, a DA-centralized course creates a common skill set across the Army and standardizes the basic requirements of field grade leaders in BSTBs or STBs.

Prior to modularity, the divisional "slice" battalions trained and maintained their respective units and then attached these units to the maneuver commander for employment. The senior leaders of these battalions were experts in their respective fields and honed their skills to better train and mentor their subordinates. That specific function of

mentoring subordinates on technical and maintenance requirements is extremely difficult without a formal training program provided by the Army. It is impossible to mentor someone on something that you are not familiar with.

The field grade leader training course would be approximately three to four weeks long with each branch or "module" having one week of dedicated training time. (The Army already embraces the concept of specific training courses for commanders and command sergeants major in courses such as the Garrison Precommand Course at Fort Belvoir, Virginia, and the Recruiting Precommand Course at Fort Jackson, South Carolina). Although three to four weeks might seem excessive, the Reserve Component Captains Career Course is seventeen days long and covers one branch with a tactical focus. The BSTB course would cover tactics as well as maintenance issues. That the Army has multiple preestablished ongoing training courses for stateside garrison commands, but not for complex units going into combat, is an "oddity" that should be corrected.

Create a BSTB/STB Identifier

The Army should create a BSTB/STB identifier and use the identifier in placing officers and NCOs that have been selected to command at the battalion level. According to MILPER Message 06-210, the Army is placing priority on assigning officers and NCOs in units where they have previously served.[12] This criterion should formally extend to the BSTBs and STBs. Having commanders that have served previously in a BSTB or an STB, and that have completed the BSTB/STB certification course, would solve the problems described above in mentoring junior leaders concerning training and maintaining equipment. This has great value both up and down the chain of command. Not only does it bond the junior leader with the senior officer and NCO, but it also prevents situations such as the one described in the scenario at the beginning of this article.

Summary

Commanding a BSTB or an STB is a challenging experience. For many battalion-level leaders, it is the first time in their Army career that they are leading Soldiers with different skill sets from their own, are geographically dispersed, and belong to distinctive subunit companies. In this type of unit, the battalion leadership is leading at the organizational level. At this level of leadership, leaders must follow doctrine as the foundation for their actions. Though there are actions that the battalion leadership can implement to address the complexity of this organization, such as a focused OPD program, I believe that ultimately the Army should create a BSTB/STB certification course. This course would quickly and significantly enhance the technical and tactical knowledge of the field grade leaders in these units, enhance the mentoring process and leader development that occurs for the battalion command team and, most importantly, increase the combat capacity of these units.

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Endnotes

[1]FM 6-22, *Army Leadership*, 12 October 2006, p. 1-2.

[2]Ibid., pp. 3-6 and 3-7 and Figure 3-3.

[3]Ibid., p. 2-7.

[4]Ibid., paragraph 3-39, p. 3-7.

[5]Ibid., paragraph 3-40, p. 3-7.

[6]Ibid., paragraph 6-36, p. 6-7.

[7]MILPER Message 06-210, *FY08 Lieutenant Colonel Army Competitive Category Centralized Selection List*, issued 28 July 2006, page 7.

[8]Chief of Staff of the Army speech at the Association of the United States Army (AUSA) Convention, 10 October 2006.

[9]FM 6-22, Appendix B.

[10]DA Pamphlet 623-3, *Evaluation Reporting System,* 10 August 2007.

[11]FM 6-22, paragraph B-17, page B-3.

[12]MILPER Message 06-210, page 7.

Note: The opinions expressed in this article are those of the author and do not necessarily reflect the official policy or the positions of the United States Army Engineer School, the United States Maneuver Support Center, the United States Army, or the Department of Defense. The author invites your feedback concerning current BSTB and STB employment and past experiences for a follow-on article. His e-mail address is <*laurence.farrell @us.army.mil*>.

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World-Class in All We Do
TRAIN, SUPPORT, TRANSFORM, CARE, ENGAGE

Only the Innovative Need Apply — Brigade Special Troops Battalion Command

By Lieutenant Colonel Scott C. Johnson

One of the most unique and challenging battalion commands in the Army is the brigade special troops battalion (BSTB). Unlike most commands, the BSTB is composed of a variety of units with vastly different primary missions and branch-specific equipment and capabilities. The Army would be hard-pressed to find officers with the background to fully understand how to effectively train and employ engineer, military intelligence, signal, chemical, and military police assets.

Due to the diversity of the battalion, every commander will struggle with establishing teamwork and mission-focus within the BSTB, but it is absolutely critical to success. Whether you call it a vision or the overarching mission of the BSTB, the commander must ensure that every Soldier in the unit understands that the primary mission of the battalion is to provide enablers that enhance the brigade's ability to successfully plan, prepare, and execute operations. Success requires teamwork and a single-minded focus on enabling the brigade's mission.

The leaders and Soldiers in the battalion must be prepared to support the brigade when and where they are needed. The BSTB's responsibilities, in many cases, span the entire brigade combat team (BCT) area of operations. To achieve success, leaders at all levels must be adaptable, and the subordinate units must understand both their primary mission and the specified missions of the battalion.

The primary mission of the BSTB is to provide command, control, communications, computers, intelligence, surveillance, and reconnaissance (C4ISR) support to the brigade with its organic assets and to execute other sustainment and support missions for the brigade, the brigade headquarters, and other supported units. The latter can include engineer units, civil affairs teams, psychological operations (PSYOPS) teams, elements of the joint forces, and any other unit augmenting the brigade or the brigade headquarters.

1-3 Brigade Special Troops Battalion,
1st Brigade Combat Team, 3d Infantry Division,
October 2006

The specified or overarching mission of the BSTB during combat can vary based on the brigade's requirements. As a command and control headquarters, the BSTB's primary focus must remain on providing support to the brigade, but it also has the ability to command and control a functional mission or, with some inherent limitations, area of operations. The specified missions for BSTBs have varied greatly over the last few years.

Many of the BSTBs had excess engineer officers and noncommissioned officers (NCOs) when they were formed. As a result, many were assigned missions associated with engineer operations in support of the BCT—civil or military. During recent deployments to support Operation Iraqi Freedom, BSTBs have been responsible for functional area missions in support of the BCT, such as Iraqi army military transition teams (MiTTs), Iraqi police transition teams (PTTs), and civil-military operations. They have also been given the mission to execute base camp operations and security.

Another unique aspect to some, but not all, BSTBs is the control of the BCT headquarters company. In some BCTs, the headquarters and headquarters company (HHC) BCT is a completely separate organization, and in others it is task-organized under the BSTB. When the HHC BCT is organized under the BSTB, a common understanding between the deputy commanding officer/executive officer (DCO/XO) and the BSTB must be established to ensure that everyone is working toward a common goal.

An effective technique in this case is to develop a memorandum of agreement that separates and assigns responsibilities for individual training and readiness requirements, company logistics and administration, and BCT staff functions, management, and training. The BCT staff is the purview of the BCT DCO/XO, and training, maintenance, and sustainment are command issues that the BCT staff must support. Success is predicated on mutual understanding and a company commander who can bridge the gap between the battalion and the brigade staff's requirements.

During combat operations, the integration of BSTB resources with the BCT staff has the potential to blur the lines of command. The brigade engineer, intelligence, and communications staff sections are responsible for planning and coordinating support for the brigade. Elements from signal and military intelligence companies enable the brigade staff to plan, manage, and coordinate intelligence collection and analysis and communication network management. The BSTB, however, is responsible for mission preparation and execution.

Successful execution is predicated on establishing the boundaries between the brigade staff and the BSTB. To ensure common understanding and situational awareness, missions for the company's resources must flow through the BCT operations and training (S-3) section via the orders process. Direct coordination between the company and the BCT staff should be allowed and encouraged, but additional coordination with the battalion and tasking authority must remain in command channels.

Tactical Unmanned Aircraft Systems (TUAS) operations provide a good example of how this process can work. The BCT intelligence (S-2) section publishes the intelligence, surveillance, and reconnaissance (ISR) matrix in coordination with the units requiring support. The initial ISR matrix should be published in a BCT fragmentary order (FRAGO) and in a BSTB FRAGO in an adequate amount of time to allow for planning at all levels. The military intelligence company has the ability to conduct parallel planning through the BCT FRAGO (essentially a warning order). Any technical or crew rest issues are worked out between the BSTB and the BCT S-2 before the BSTB issues its order.

All the mission planning and preparation to successfully execute TUAS operations is the responsibility of the military intelligence company and the BSTB. Once the TUAS is airborne, tactical control of the aircraft may revert to the supported unit and the brigade. A TUAS liaison officer can synchronize targets, in-flight diversions, and time on station in coordination with the BCT S-2 and S-3 battle captains directly. By operating in this manner, both the military intelligence company and the BSTB can monitor execution while providing maximum flexibility. When the

> ***"At any time, these Soldiers must understand the capabilities of both their own companies and the mission and functions of the battalion as a whole."***

TUAS returns to base or lands, full control of the asset again returns to the military intelligence company and the BSTB.

This cooperative process should also apply to other assets in the military intelligence company, the signal company, and the chemical and military police platoons when they are supporting brigade operations. Depending on the missions the chemical and military police platoons are assigned, it is possible to keep all coordination and planning at the battalion level. When these units aren't engaged directly in the brigade fight, the BSTB has the ability to employ these units in support of the battalion's other missions or to enhance the battalion's execution of other support and security functions.

Regardless of the mission, the BSTB must have well-disciplined and trained Soldiers and adaptable leaders to achieve success. Individual training within the BSTB companies and the HHC BCT (if attached) must focus on individual expertise—both as a Warrior and in their specialty. The goal, as in any command, is to produce Soldiers skilled in the Warrior Tasks and Battle Drills and imbued with the Warrior Ethos. The signal, military intelligence, engineer, military police, chemical, infantry, and other Soldiers must also be highly proficient in their military occupational specialty (MOS)-specific skills at the individual and collective levels.

Training Soldiers on Warrior Tasks and Battle Drills is fairly straightforward. In the BSTB, training Soldiers, teams, sections, platoons, and companies is as complex and diverse as the organization and missions they are expected to perform. Developing, resourcing, and executing a training plan that creates experts in the broad range of specialties requires leaders who fully understand the mission of their unit and the training resources available to them. Training is available at the installation, through the various schoolhouses, from the Department of Defense and other outside agencies, from civilian technical institutions, and through other accredited venues. Leaders within the BSTB must be innovative in searching out training opportunities and resources for their Soldiers to ensure that they have the skills and tools to succeed.

The officers and NCO leaders within the BSTB must be adaptable and multifunctional. Officers from multiple branches and NCOs with a broad spectrum of MOSs fill the ranks of the BSTB. At any time, these Soldiers must understand the capabilities of both their own companies and the mission and functions of the battalion as a whole. This will enable the companies and units within the BSTB to achieve a certain synergy that enhances the overall effectiveness of the battalion and enable leaders to develop techniques to enhance the mutual support required to ensure their success.

As with any organization, it is a challenge to develop adaptable and innovative leaders, but the BSTB absolutely requires them. It requires a constant top-driven focus on how the unit and its diverse elements can improve their effectiveness and efficiency. It requires problem solvers who can develop solutions with limited resources. It requires a team mentality among the officers in the battalion and teamwork between what have historically been stovepipe organizations. It requires leaders to encourage and nurture junior leaders and Soldiers to develop workable solutions and implement them.

Commanders, staff officers, and senior NCOs assigned to the BSTB must be willing to expand their experience base, learn a variety of new skills and technical knowledge, and grow both professionally and personally. The success of the Army's BCTs requires dedicated and innovative leaders who are focused on achieving results. When approached with an open mind and willingness to place the mission of the brigade first, BSTB command is a personally and professionally rewarding experience that demands the best.

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Harnessing the Technical Span of Control

By Major Jared L. Ware

The future engineer force and modularity have increased the technical span of control for combat effects engineer battalions. "Span of control" refers to the number of subordinate units a commander must command and control; at the battalion level, that is normally three to five companies of similar capabilities. Major William G. Pierce, an engineer officer, wrote a monograph on operational span of control in 1991 while a student at the Command and General Staff College. He concluded that the military education system is the primary factor that will enable a commander to expand his span of control. This holds true today as the Regiment organizes various capabilities into its existing battalions and brigades.

Engineers from the 65th Engineer Battalion conduct geospatial analysis in a field environment.

Technical Span of Control

A former commander of the 29th Engineer Battalion (Topographic) coined the phrase "technical span of control" to explain the structure of the unit, which was topographic in name only: the battalion had a dive detachment, a transportation company, a topographic company, and a topographic planning and control element. The success of the unit truly depended on the background of leaders entering the unit and their ability to broaden their horizons by understanding the capabilities of the units through the study of doctrine and operational experience gained while assigned to the battalion.

The key question to examine as the Regiment transforms is how it will prepare future battalion and brigade commanders to effectively lead with the increased technical span of control. Currently, there is no integrated training and education plan—or even a suggested career path—for future leaders to follow to strengthen their skill sets. Moreover, the current debate on the technical proficiency of engineer leaders suggests that the emphasis on a combat-oriented mentality has contributed to a decline in skills. That may explain part of the decline, but the increased technical span of control within combat effects battalions, with additional companies and detachments assigned to battalion flagpoles, has increased the demand for technical competency at all levels. If the Regiment fails to address this issue, the image of the Regiment could slowly erode to the point where "Essayons" is merely a catchphrase instead of our sacred creed. By taking some immediate steps, the Regiment can improve the ability of its leaders to harness their technical span of control and succeed in the engineering challenges ahead.

Photo by Airman 1st Class Matthew Plew

Military police Soldiers from the 10th Mountain Division provide rooftop security for their dismounted team during a routine inspection of a local Iraqi police station.

Training Junior Leaders

The 65th Engineer Battalion (Combat Effects) can be used to illustrate the issues associated with technical span of control because the battalion covers the combat, general, and geospatial engineering spectrums. Also, I can expound on the issue based on personal experience and empirical evidence. The battalion consists of a headquarters company, a forward support company, a geospatial planning cell, a dive detachment, a topographic company, an engineer support company, a clearance company, and an attached chemical company. The battalion will also activate a sapper company and an explosive hazards team in the near future. Understanding that it is difficult for one person to master all of these capabilities in a short amount of time, the battalion has focused on training its junior leaders on the various engineer capabilities. The goal is to introduce them to the battalion's capabilities, offer them the opportunity to serve in more than one type of unit, and expand their overall technical proficiency.

To address the increased technical span of control, the battalion has implemented an officer development and certification program to address technical proficiency at the junior officer level. This program is a series of 65 events that cover basic officer tasks as well as tasks related to combat, construction, and geospatial engineering. The battalion commander also closely manages the officer slate to ensure that junior officers, including dive-qualified officers, can serve in more than one type of engineer unit. Field grade officers have been selected based on a mixed background in combat, construction, geospatial and/or general engineering to ensure that no "single-tracked" mentality degrades the battalion's diverse training plan. The battalion's emphasis on training and education, as well as its ability to bring in multifaceted leadership, has significantly improved its technical span of control. Moreover, it has improved the commander's ability to command, control, and direct engineer

Soldiers from the 71st Chemical Company generate smoke at Pohakuloa Training Area, Hawaii.

capabilities with greater confidence in mission success. The ability to increase the technical span of control is directly proportional to the training and education of key leaders in multiple facets of full spectrum engineering.

A doctrinal or organizational modification cannot completely alleviate the span of control gap, particularly with the modular engineer force requirements. The answer lies in the training and education of field grade and company grade officers, since they are the major decision-makers in training and equipping their units. Junior leaders must understand the limitations of the battalion headquarters and strive to become the technical experts in their respective units. The more technically qualified the leaders at the company level, the further the battalion commander can expand the battalion's technical span of control. The inverse is also true; the less technically competent the junior leaders, the smaller the technical span of control at the battalion level.

Engineer from the 65th Engineer Battalion conduct demolition operations at Pohakuloa Training Area, Hawaii.

Learning engineer organizations and their capabilities requires continuous training, education, and operational experience, which will allow the Regiment to prepare its future leaders to feel comfortable with an increased technical span of control.

Future Emphasis

Continuous Learning. Expand distributed learning (dL) training and mandate its completion as an educational requirement. The Army's sister Services require engineers to obtain professional engineer designations. At a minimum, the Army could have engineer officers watch a few training videos online during the Basic Officer Leader Course, Engineer Captains Career Course, or intermediate-level learning courses and document their completion with a certificate. Review the current engineer force structure and immediately address all significant leader training shortfalls with a more robust educational package.

Expand Unit Nomenclature. Keep the headquarters table of organization and equipment structure, but expand the nomenclature, naming battalions according to their missions and subordinate capabilities, such as combat, construction, or prime power. The "effects" title is confusing, especially when there are dive teams and geospatial planning cells in the same battalion structure. Review the naming conventions and get feedback from the field on whether or not the current structures enhance or detract from the Regiment's image.

Feedback From Engineer Leaders. Examination of the careers of current active duty engineer brigade commanders shows that they served key leadership and staff assignment time in either combat or construction units only. Each brigade now has at least one combat effects battalion and one construction effects battalion, as well as other companies and detachments that cover the gamut of full spectrum engineering. Perhaps these leaders could share their insight on topics such as, "If I had trained in this area, or had served in this type of unit, or had received this type of education, then it would have given me a wider technical span of control."

Good venues to share ideas could be—

- The Engineer Portal (*<https://www.mwu.army.mil/portal/eng/index.php>*)
- "The Engineer Blast," published by the United States Army Corps of Engineers. For past issues, login to Army Knowledge Online (AKO) and type in <https://www.us.army.mil/suite/folder/1066848>.
- The Engineer Leader Technical Competency site at AKO. To gain access to the site, e-mail Captain Mark Conrad at *<mark.aaron.conrad@us.army.mil>*.

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Integrated Unit, Base, and Installation Protection: An Introduction to the Defense Community

By Colonel Arthur L. Clark, Lieutenant Colonel David F. Koonce, and Mr. Michael J. Martori

In the 1966 film production of the classic Broadway comedy "A Funny Thing Happened on the Way to the Forum," a cast of diverse characters with contrary agendas and invested hostilities eventually achieve harmony and satisfaction of their competing needs. They find out that they have a great deal more in common than the differences they first saw between each other. To our great benefit, the Department of Defense (DOD) has witnessed in the first decade of this millennium a similar sequence of events in the joint capability area (JCA) of protection.

One might say that in August 2006, a funny thing happened on the way to the Chairman of the Joint Chiefs of Staff (CJCS) Force Structure, Resources, and Assessment Directorate (J-8) Protection Functional Capabilities Board (PFCB). In short, the Army—informed by success in the Comprehensive Force Protection Initiative (CFPI)—began aggressively exploring and developing joint dependencies with the sister Services for protecting our forces through the continuum of movement from garrison to the forward edge of battle and back to garrison. Not surprisingly, we (the Services and joint staff) came to realize that the future of protection is fundamentally a joint mission of Service and combatant command (COCOM) equals, who have many more similarities than differences, with the common purpose of enabling the success of the joint warfighter. As a result of the decision of the Joint Requirements Oversight Council (JROC) in November 2006, the Integrated Unit, Base, and Installation Protection (IUBIP) capabilities-based assessment was initiated for the years 2012 to 2024, and IUBIP has been on a fast track with unanimous Service and COCOM approval ever since (see Figure 1). The Service sponsor for joint protection is the

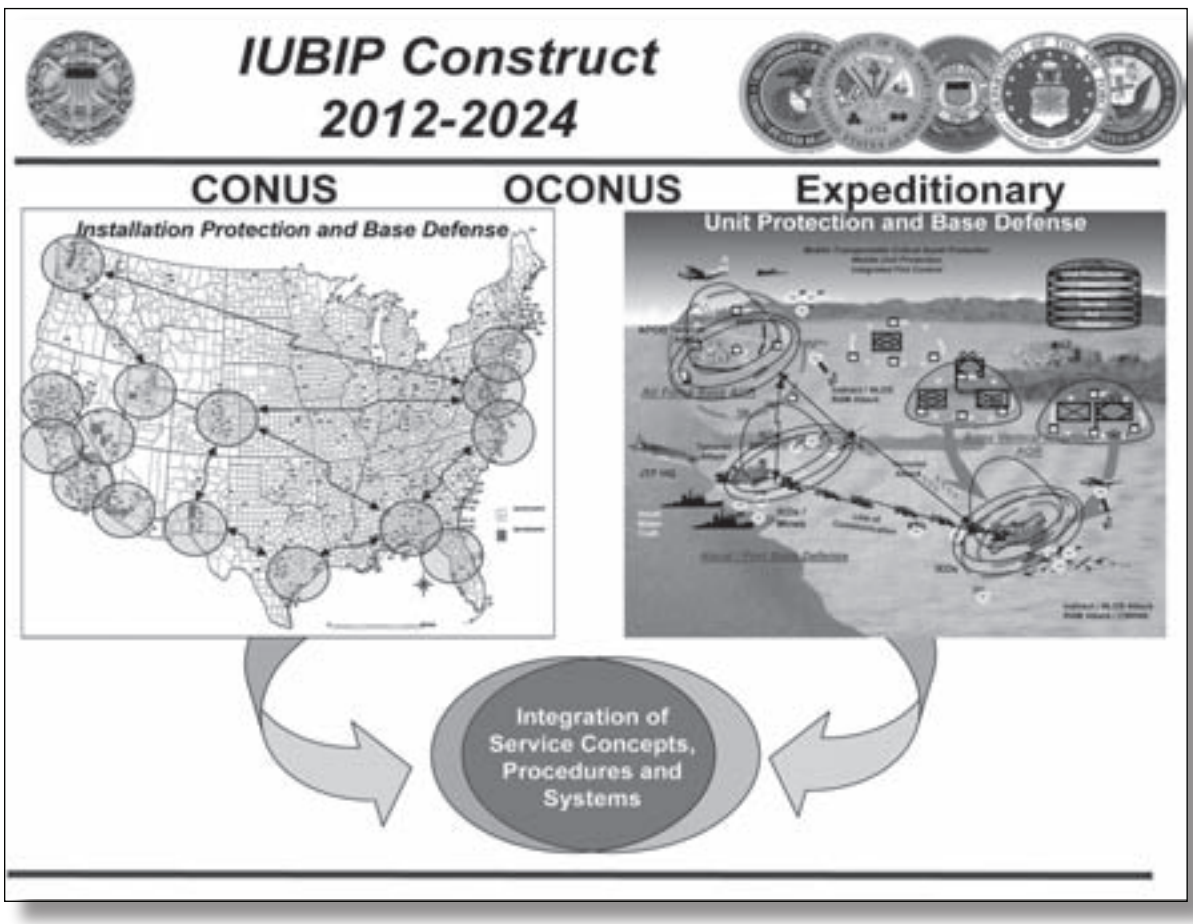

Figure 1

Army. The COCOM sponsor is the United States Transportation Command (USTRANSCOM).

We recognize that terrorist, militant, and low-intensity threats remain among our nation's most pervasive challenges. At risk and considered high-value targets are DOD personnel, facilities, and information. In response to these challenges and with focus on the future, IUBIP—a joint endeavor—integrates protection capabilities across the force, eliminating unnecessary redundancies. With interoperability as the touchstone, IUBIP seeks to immediately improve protection with nonmateriel solutions in doctrine, organization, training, materiel, leadership and education, personnel, and facilities (DOTMLPF), while specifically constraining the materiel of DOTMLPF to investment in current programs and avoiding new acquisition. Separate from DOTMLPF, IUBIP proposes new acquisitions on a case-by-case basis, only when necessary, and in coordination with the CJCS J-8 and the Office of the Secretary of Defense (OSD). IUBIP seeks to break the mold of performing acquisition and delivery of systems independent from the essential DOTMLPF support structure.

In the past, we have received our materiel systems only to discover that doctrine, organization, training, personnel, and facilities are insufficient and must be quickly backward-engineered to accommodate large financial acquisition investments. The resulting stovepipes, vertical cylinders of excellence, make attractive slide presentations, but deny joint interoperability and fall short of delivering the best possible protection capabilities that our Sailors, Soldiers, Airmen, and Marines deserve. Under the joint force construct of detect, assess, warn, defend, and recover (see the protection joint functional concept issued by the Director of the Joint Staff, CJCS, <*www.dtic.mil/jointvision/jroc_protection_jfc.doc*>), IUBIP delivers 360-degree hemispherical surface and subsurface protection against threats, to include kinetic; electronic; informational; and chemical, biological, radiological, nuclear, and high-yield explosives (CBRNE). IUBIP provides the Services and COCOMs with a unique opportunity to solve gaps and seams in command and control and net-centric operations, while offering a case study to other JCA proponents for integration and portfolio management.

IUBIP's principal objectives are to—

- Integrate protection capabilities for units, bases, and installations across the full range of military operations from the operational to tactical levels in the 2012 to 2024 timeframe.
- Leverage existing protection efforts and increase interoperability.
- Support homeland defense and critical infrastructure protection.

IUBIP's Operational View (OV)-1 (see Figure 2, page 50) presents the end state goal. Using the joint construct of detect, assess, warn, defend, and recover, IUBIP provides integration and synchronization of protection capabilities across three operational modes:

- Fixed sites.
- Semifixed or expeditionary sites.
- Mobile operations using the joint construct of detect, assess, warn, defend and recover.

The OV-1 shows the enabling function of worldwide connectivity through the Global Information Grid (GIG) with scalable and tailorable capabilities that can be delivered through economies of scale and standardization. The connecting lines between the three operational modes depict the deliberate and purposeful integration and interoperability of protection capabilities. The protection functions, when applied synergistically, yield a mosaic of integrated military tasks providing interoperable protection capabilities for the joint force.

To date, the Services and CJCS J-8 have given unanimous approval to IUBIP at all milestones in the Joint Capabilities Integration and Development System (JCIDS). The Army-led joint team at the United States Army Maneuver Support Center (MANSCEN), Fort Leonard Wood, Missouri, began work immediately following the JROC approval of the concept in November 2006. With all Services participating, the joint team accomplished a record performance by delivering a concept of operations, functional area analysis, joint capabilities document, and interoperability functional solution analysis by September 2007—less than 12 months from the start. The Navy-led joint team at Commander, Naval Installations Command, Norfolk, Virginia, stood up in September 2007 and joined the Fort Leonard Wood team in delivering the interoperability initial capabilities document and the detect-assess-defend functional solution analysis by May 2008—less than 9 months from the start. The teams anticipate completion and approval of the final capabilities-based analysis product, the detect-assess-defend initial capabilities document, in September 2008.

Fiscal year 2009 is payday for the hard work that the IUBIP team has invested, a team spanning DOD from the United States Navy (USN), United States Army (USA), United States Air Force (USAF), and United States Marine Corps (USMC) representatives at Fort Leonard Wood and Norfolk to the Service staffs, joint staff, and OSD secretaries. Without question, the team's performance has been admirable, selfless, and beyond reproach. Thanks to the support of the Assistant Secretary of Defense for Homeland Defense (ASD-HD); the Director of Operations for the joint Staff (J-3); the Army Deputy Chief of Staff for Programs (G-8); and the Joint Program Executive Office for Chemical and Biological Defense (JPEO-CBD), fiscal year 2009 work is funded. Preparations are on track.

In fiscal year 2009, the Fort Leonard Wood joint team will produce the interoperability and detect-assess-defend DOTMLPF change recommendations with nonmateriel solutions to be approved by the JROC for rapid implementation across DOD. The Norfolk joint team will perform the IUBIP interoperability analysis of alternatives to define the future acquisition trade space (the degree of flexibility in trading performance objectives against one another to achieve the best results) for protection and provide specific

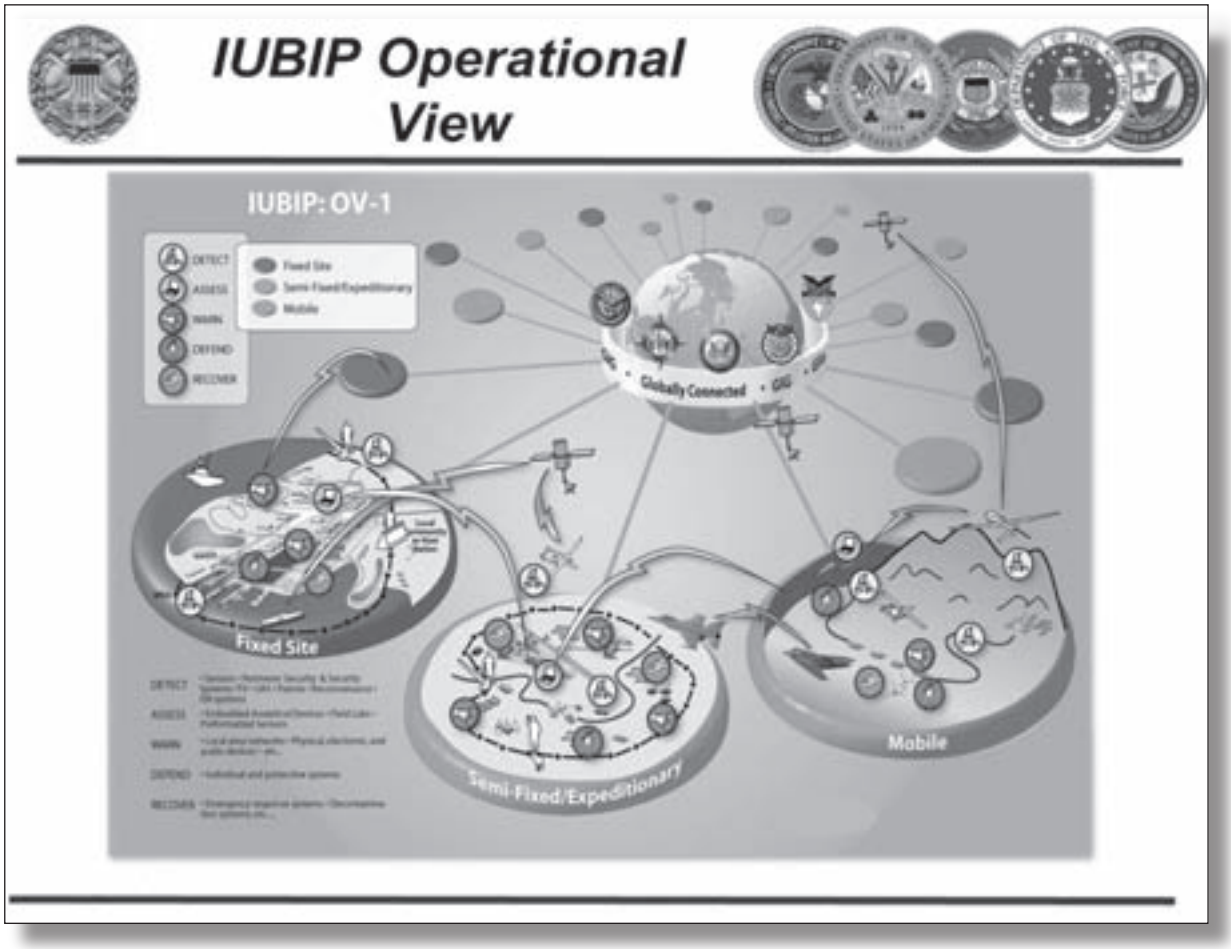

Figure 2

investment recommendations to the JROC and the Deputy Secretary of Defense's advisory working group.

Colonel Clark is assigned to the Joint Chiefs of Staff J-34, Deputy Directorate for Antiterrorism and Homeland Defense, with his primary duty being J-3 Coordinator for the IUBIP initiative. His combat deployments include Operation Desert Shield and Operation Desert Storm, 1990-1991; Operation Enduring Freedom, 2002-2003; and Operation Iraqi Freedom (Qatar and Kuwait), 2005.

At the time this article was written, Lieutenant Colonel Koonce was assigned to the United States Army Maneuver Support Center (MANSCEN), Concept Development Directorate, Fort Leonard Wood, Missouri, with his primary duty as the MANSCEN Joint Team Lead for the IUBIP initiative. His combat deployments include Operation Enduring Freedom and the Combined Security Transition Command – Afghanistan (CSTC-A), Detainee Operations, Afghanistan.

Mr. Martori is the program manager for L3/Global Security & Engineering Solution at Fort Leonard Wood, Missouri. He supports the United States Army Maneuver Support Center (MANSCEN) Concept Development Directorate and is the lead action officer for the IUBIP initiative at Fort Leonard Wood. He retired from the Army in January 2006 after more than 21 years as a military policeman.

Note: A future article will provide an overview of the DOTMLPF change recommendations and analysis of alternatives processes.

The author would like to thank the following people for their input to their article: Mr. Nash Howell, Mr. Joe Heck, Mr. Dwight Grose, Mr. Don Murray, and Mr. Mark Ferguson

Special thanks is given also to the following commands and offices for particularly significant contribution and support: CJCS Operations Directorate (J-3); CJCS Force Structure, Resources, and Assessment Directorate (J-8); CJCS Command, Control, Communications, and Computer Systems Directorate (J-6); USA Maneuver Support Center (MANSCEN); USA Capabilities Integration Center (ARCIC); USN Commander Naval Installations Command (CNIC); USAF Office of Aerospace Studies (OAS); USAF Air Armament Center (AAC); USAF Directorate of Security Forces (A7S); USAF Directorate of Operational Capability Requirements (A5R); USMC Force Protection; USMC Capabilities Development Center (MCCDC); USMC Plans, Policies & Operations (PPO); USN Deputy Chief of Naval Operations; Director, Assessments Division (N81); USN Naval Surface Warfare Center (NSWC); USN Naval Expeditionary Combat Command (NECC); USA Deputy Chief of Staff for Programs (G-8); USA Deputy Chief of Staff for Operations (G-3); USA Air Defense School and Center (ADSC); Joint Program Executive Office for Chemical and Biological Defense (JPEO-CBD); US Transportation Command (USTRANSCOM) J3; USTRANSCOM J5J4; USTRANSCOM J2; US Central Command (USCENTCOM) J3; Defense Intelligence Agency (DIA); Assistant Secretary of the Navy for Installations and Environment (ASN I&E); ASN Identity Management (IM); Assistant Secretary of Defense for Homeland Defense (ASD-HD); Under Secretary of Defense for Acquisition, Technology and Logistics (USD-ATL); USD for Intelligence (I); OSD Networks and Information Integration (NII); Defense Acquisition University (DAU); DOD Physical Security Equipment Action Group (PSEAG); Defense Threat Reduction Agency (DTRA); Unified Cross Domain Management Office (UCDMO); Department of Homeland Security Science and Technology (DHS S&T); and DHS Office of Infrastructure Protection (OIP).

"WHEN THE EARTH SHAKES!"

Detainee Disturbances in an Internment Facility

By Lieutenant Colonel John F. Hussey
and Major Robert L. Berry

Military police forces in the contemporary operating environment are becoming increasingly involved in detainee operations. In addition to military corrections for military service members, an even larger number of military police Soldiers are performing detainee missions in Iraq, Afghanistan, Guantanamo Bay, and other locations. These detainees are not the compliant prisoners of war found in the European theater of 1944. These extremists want to continue their "Jihad" by any and all means, even while they are detainees. These actions may include passive resistance to facility rules (such as refusing to participate in an accountability formation), escape attempts, and endeavors to use improvised weapons and engage in combat with guard forces. This article will discuss some observations made by the 306th Military Police Battalion during detainee operations at Abu Ghraib prison in Iraq in 2005.

Every day, Soldiers in detention operations missions are guaranteed one thing: contact with the enemy. Once captured by coalition forces, detainees do not simply give up their will to fight but, rather, begin a new phase of warfare—insurgency within the wire. As in any prison setting, there are chains of command—formal (known by prison officials) and informal (known by members of the prison population)—that have objectives which are usually contrary to that of the prison administration.

Detainee disturbances can be classified into three broad categories: low-level, nonviolent protests; small-scale, violent disturbances; and full-scale riots. The factors that separate the categories include the number of detainees involved, the number of compounds affected, and the level of violence emanating from the disturbance. For example, a peaceful demonstration by 200 detainees may be classified as a low-level disturbance, while a marauding group of 50 detainees attempting to take over a compound would be considered a full-scale riot. Some disturbances include detainee protests, group rivalry, diversionary tactics, and insurgency attempts. Detainee protests may stem from a variety of factors, including concern over the cause and/or length of their incarceration, quality-of-life conditions in the facility, perceived treatment by the guard force, and political expression. All of these factors should be examined within a cultural framework. For most detainees, everything was somehow connected to Islam. Suggestions to proactively reduce these protest factors include creating a forum

for detainees to obtain information on their specific cases. For instance, we allowed detainees to complete a form listing inquiries that, in turn, were answered by Multinational Force–Iraq staff judge advocates. Sometimes, the answer wasn't what the detainee wanted to hear; but, for the most part, answers were appreciated.

Military police guard forces who pay particular attention to detainee quality-of-life conditions help prevent many disturbances. Ensuring that detainee meals are appropriate (according to religious, cultural, and dietary requirements) helps to reduce the tension between the guards and the inmates. Soliciting detainee input with the help of host nation government consultation resolves many questions. In addition to food, quality-of-life issues include recreational opportunities, education, and religious expression. As a cautionary note, extremists within the detainee population often attacked these issues to stir up resentment among the other detainees. Additionally, while certain quality-of-life issues may be used as a means of rewarding correct behavior, this practice must be done according to applicable laws and command guidance (for example, denial of food is not an acceptable punishment; however, recreation privileges may be reduced due to rule violations).

All contact between guards and detainees should be monitored. Proactive leader involvement is the best means of preventing problems. Perceived transgressions may include guard handling of religiously sensitive items (such as the Koran), verbal insults or taunts, and unnecessarily rough handling. These concerns should not deter guards from properly performing their jobs and enforcing facility rules, but they should cause us all to consider our actions and assess subsequent effects (such as second- and third-order effects).

Detainees may cause disturbances due to their expression of political will. As mentioned before, culture often plays a primary influence. Giving detainees an outlet to express political views may be a means to reduce tension and, also, inculcate them to democratic values. However, demonstrations must be monitored to ensure that they don't escalate into violent confrontations.

Rivalry between detainee groups may be the cause of some disturbances. At Abu Ghraib, we often maintained a diversified population in the larger compounds. Careful monitoring, population management, and identification of all groups within the detainee population are important. The most obvious groups are religious sects (such as Sunni versus Shiite), but groups may become more detailed and diverse (such as religious extremists or former Baath party members). There may be local nationals and foreign nationals or detainees from the same or rival insurgent groups. Tribal membership may prove to be as important as religious identification. This information must be carefully developed, constantly updated, and frequently disseminated.

The ultimate cause of a disturbance may be the desire of the most extreme insurgent detainees to continue their Jihad fight by engaging in direct combat with military police guards. Detainees will often use improvised weapons ranging from clubs, edged instruments, stabbing instruments (such as shanks), slingshots, and just about anything else they can think of and get their hands on. For these extremists, addressing quality-of-life issues will not matter. These insurgents are only interested in combat (and base their success on how many Soldiers they can injure and how much disruption they can cause). The best means of dealing with these problem detainees is identifying them and then separating them from the general population.

The best means to combat disturbances is to understand the root cause (if possible) and proactively address the problem. Reducing tension will decrease the severity and number of incidents; however, no actions will prevent all detainee disturbances.

Soldiers who have experienced traditional contact with enemy detainees understand the phenomena and complete adrenaline rush of the situation—a situation in which the instinct to survive takes over. Contact with the enemy during a detainee uprising is not contact in the traditional sense of a military engagement but is, nevertheless, frightening. If you can imagine 3,000 detainees chanting "Allah Akbar" while burning tents, throwing rocks, and massing into formations—you can visualize the conditions for a long and charged engagement. Military personnel will tell you that you can literally feel the ground shake—resulting, obviously, in physiological effects on Soldiers.

There are usually telltale signs when detainees are planning disturbances. When the identification of involved personnel is confirmed, all guards are told to be particularly observant of those detainees. Additionally, if a disturbance is suspected, the intelligence officer (S-2) tracks the activity of the suspect detainees. When the 306th Military Police Battalion confronted disturbances at Abu Ghraib, we practiced the following basic tenets:

- Facility rules are nonnegotiable.
- Violence will not be tolerated.
- Violators of facility rules will be disciplined according to facility standing operating procedures (SOPs).
- Verbal persuasion will be used first to gain compliance.
- The use of force by military police guards will be appropriate to the situation.
- Disturbances will be contained as well as possible.
- We control this facility!

While we were always willing to speak with the detainees, we were cautious to never allow them to

believe that they could coerce us into changing the rules. While giving in to a simple demand to halt a disturbance and prevent further violence may seem reasonable, the detainees will not stop there and may feel emboldened to push the situation further in future incidents.

One of the most important things that must be done is capturing disturbances on video. Videos offer numerous advantages to military police and should be considered an assigned task for specified Soldiers. With video footage, enemy leaders can be identified (likely as the individuals encouraging other detainees to riot).

We always made it clear that violence, whether against fellow detainees or against Soldiers, would not be tolerated under any circumstances. Violators were dealt with according to the facility discipline SOP. We made every effort to make this system transparent so that every detainee could understand it. This practice also reinforced the democratic concept for the rules of law.

As we expected detainees to follow the rules, it was just as critical that military police forces follow the established rules regarding the use of force. Guards who act like lone rangers can cause disturbances and may make detainees more violent than necessary.

Preventing disturbances from growing and impacting other parts of the facility was key to our tactics for dealing with disturbances. We trained our leaders to—

- Immediately report disturbances.
- Take steps to isolate disturbances (keep them from moving).
- Contain disturbances (keep them from growing).
- Continuously gather and report information.
- Assess the threat of disturbances (think of the big picture and the impact of a facility-wide disturbance).
- Recommend and select appropriate courses of action and contingency plans.
- Provide overwatch security.
- Gather needed resources.
- Implement action plans.
- Reassess and monitor results.
- Maintain accountability of personnel and key equipment.
- Document and report all incidents.

After experiencing many disturbances, we discovered several issues that future military police guards should consider. Command, control, and communications are extremely difficult during disturbances. The sounds of conflict make voice and radio communications nearly impossible. Leadership and widely understood contingency plans can ease some of these issues. Logistics support during and after a disturbance can be a challenge. Operations in stockpiling, rationing, and emergency resupply missions should be planned and rehearsed.

As mentioned before, it is important to limit disturbances to a small area and a few detainees if possible. We found that disturbances had a tendency to cascade to other compounds. Other detainees may have had no idea how the incident started, but they jumped in at the first opportunity to riot. This is why it is important to consider the second- and third-order effects in every action you take with detainees. There may be occasions when it is better to "not make a mountain out of a molehill"; therefore, do not respond to a detainee provocation.

Detainees spend a great deal of time watching the actions of guard forces, both before and during incidents. Just as detainees will sometimes use disturbances as distractions from other actions (such as escape attempts), we can use distractions to combat disturbances. Considering the capabilities of counter-disturbance resources is crucial to success. At the 306th, we maintained levels of response forces to combat disturbances. The first-level response was several predesignated military police guards within each facility area that could rapidly move to reinforce areas encountering a disturbance. The second-level response was a full-time, squad-size, dedicated response force or immediate response force (IRF). Members assigned to the IRF lived and trained together 24 hours a day. They were specially trained and equipped to deal with a full range of detainee disturbances and could respond to any part of the facility within 10 minutes. The vehicles dedicated for use by the IRF were equipped with a variety of less-than-lethal (LTL) force options and tools. There is an abundance of LTL options available to military police guards. And additional options are constantly being introduced. It is critical to employ them in concert with one another and not in isolation.

For full-scale riots, we activated our third-level response plan to alert, mobilize, and deploy every Soldier in the battalion. Upon alert, all off-duty and on-duty, nonguard Soldiers reported to their company assembly areas. Each company maintained pre-positioned vehicles, supplies, and equipment. Leaders mobilized their Soldiers and deployed them to designated rally points.

Some of the LTL systems we employed included oleoresin capsicum (OC) pepper spray, X26 Tasers, 12-gauge shotguns, FN303 rifles, 40-millimeter M203 rounds, flash-bang grenades, sting ball grenades, long-range acoustical devices (LRADs), modular crowd control munitions (claymore mines), and fire hoses. Military police guard forces were involved in an arms race with the detainees because, as new LTL weapons were introduced, detainees developed methods to counter them. For instance, detainees quickly realized the range limitations of our LTL shotgun rounds. They would simply hover

just outside their range and use hand-thrown projectiles or slingshots to strike our Soldiers. We countered this with the introduction of the FN303, which greatly outranged the shotguns. An effective combination was the FN303 to engage detainees in the open and then sting ball grenades to clear combatant detainees from areas the FN303 could not engage. We used the LRAD to move large groups of combating detainees. We experimented with the use of modular crowd control munitions by mounting them on vehicles to produce rapid deployment and detonation, resulting in increased surprise and effect for the detainees. The important factor was thinking in terms of the effect and range of individual weapons and how to best employ them in concert.

The challenge of detainee operations is growing and will continue to be an essential part of military police missions in the foreseeable future. In order for military police guard forces to maintain proper care, custody, and control of detainees, we must be prepared to deal with detainee disturbances—an absolute fact in the War on Terrorism! Leaders must be prepared to deal with disturbances through realistic planning. This can be done by examining past disturbances, after-action reviews (AARs), Army Regulation (AR) 15-6 investigations, command inquiries, and discussions with transitioning units. Leaders must have a plan in place to react to events. A large-scale detainee disturbance may be one of the most difficult leadership challenges that an officer or senior noncommissioned officer will encounter in his career. Remember the following:

- Stay calm!
- Videotape the disturbance.
- Include leadership presence in the camp.
- Develop a sleep plan.
- Maintain fire discipline.
- Engage detainee leadership.
- Reduce tension in the camp, and restore the camp to normal activity as quickly as possible.
- Hold instigators accountable (detainees and Soldiers).
- Conduct AARs.
- Review tactics, techniques, and procedures (for detainees and Soldiers).

The success of the 306th Military Police Battalion was largely due to the tireless efforts and dedication of its Soldiers. This article is dedicated to them!

Reference:

AR 15-6, *Procedures for Investigating Officers and Boards of Officers*, 2 October 2006.

Note: Due to security concerns, this article was modified before publication in *Military Police*. Individuals with access to Army Knowledge Online may view the article in its entirety in that forum.

Lieutenant Colonel Hussey is the assistant plans officer for the Assistant Chief of Staff, G-5 (Civil Affairs), 353d Civil Affairs Command. He is currently attending the U.S. Army War College. Major Berry is the commander of Detachment 1, 11-80th Regiment, 84th Training Command. He is a graduate of the Command and General Staff College. Lieutenant Colonel Hussey and Major Berry served in 2005 as the commander and operations and training officer, respectively, of the 306th Military Police Battalion at Abu Ghraib prison.

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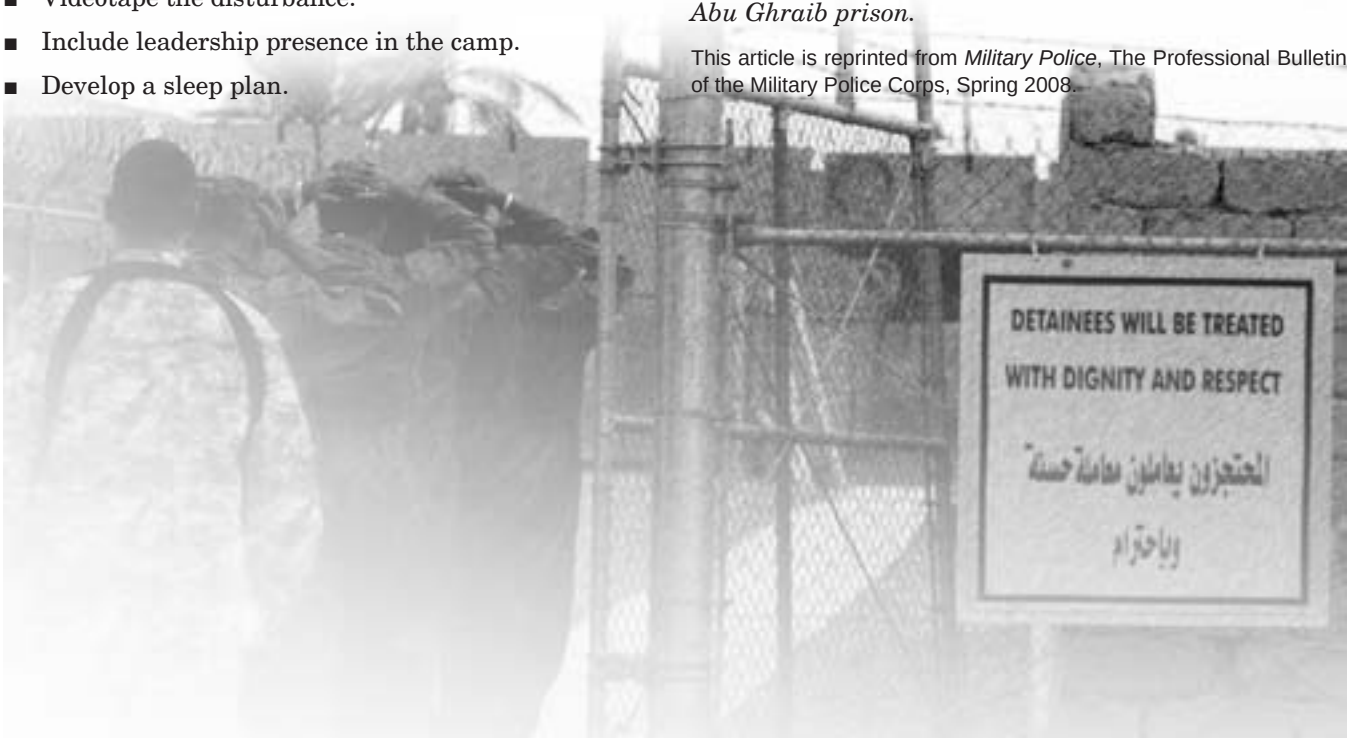

CBRN Hazard Mitigation and Geospatial Data:

A Synergistic Approach

By Major Jared L. Ware

In regions where increasing numbers of people occupy a finite and densely crowded area, urbanization, migration, public health, and refugees are factors of growing strategic importance.

—Field Manual (FM) 3-100.4

Due to recent military operations in Afghanistan and Iraq, the Chemical Corps has taken on an increased role in protecting forces and civilians from industrial and environmental threats. One mission in particular—hazard mitigation—has increased in scope due to the presence of industrial infrastructure within the urban battlespace. Not only do adversaries pose chemical, biological, radiological, and nuclear (CBRN) hazards through a variety of weapon systems, but the industrial infrastructure also creates new and additional threats. Coalition forces must protect the infrastructure from terrorist activities and monitor operations to ensure that environmental hazards do not occur. CBRN personnel can use geospatial information and engineering systems (available at various staff echelons) to better predict, track, assess, and mitigate hazards. The use of these systems allows for a synergistic and effective approach to CBRN hazard mitigation and force protection.

Hazard Mitigation

CBRN hazard mitigation requires an understanding of the threats within the area of operations (AO) and defined areas of interest. Environmental threats to stability and security might result from acts of war or terrorism that destroy the infrastructure (petrochemical facilities, power plants, nuclear sites). Moreover, environmental threats such as polluted air or water may result from routine activities of an industrial society.[1] These threats should be identified, defined, and prioritized by chemical, engineer, and medical planners of the environmental protection cell (EPC) during mission analysis. Members of the cell can use geographic information systems (GISs) and geospatial engineering to plot and track the threats, perform predictive analysis, and collect geospatial intelligence.

Geospatial Advantage

Geospatial intelligence (GEOINT) refers to the exploitation and analysis of imagery and geospatial information to describe, assess, and visually depict physical features and geographically referenced activities such as CBRN incidents.[2] Information about incidents can be entered into the GIS database, appropriately labeled, referenced by geolocation, and displayed on digital imagery and three-dimensional digital elevation models. This allows the EPC to maintain a credible data set with robust layers of information that can be easily updated for current or predictive analysis. Geospatial engineering hardware systems such as the Digital Topographic Support System contain special suites of software (ArcGIS, ERDAS IMAGINE) used by geospatial analysts to visualize the battlespace and analyze the terrain. The systems are capable of accepting various forms of data (imagery, Global Positioning System points) that enhance CBRN analysis and support hazard mitigation.

Synergy Achievement

The overall goal of hazard mitigation is to prevent CBRN threats from becoming incidents that could harm personnel or equipment. In the current operational environment, insurgents can obtain relatively cheap, easy-to-make CBRN weapons. These weapons can be used directly against personnel or critical infrastructure to produce a CBRN industrial or environmental incident. EPC staff expertise and the ability to predict, visualize, and assess potential threats are required to mitigate those threats and protect the force and critical infrastructure.

The EPC staff can use geospatial information, engineering systems, and intelligence analysis to war-game potential courses of action. Maps and imagery can be used to identify critical facilities within an AO. The descriptions and locations of the facilities can then be entered into a GIS database. The EPC staff can use this information to develop a protection plan. Figure 1, page 56, shows a sample analytical product that can be generated in this manner. It illustrates the results of a line-of-sight analysis conducted for a prominent intersection within the industrial area of a city. The 360° analysis indicates, within a radius of 10 kilometers, which facilities can and cannot be observed from the intersection. A line-of-sight analysis such as this allows the EPC staff to determine optimal locations for critical infrastructure observation posts within the AO.

The EPC staff can also develop predictive analyses to ensure that proper actions are taken for CBRN incidents and that proper resources are devoted to incident responses.

Figure 2 represents a downwind plot for a hypothetical CBRN incident in a populated area. In this case, the question is whether the Lake Ridge Executive Park needs to be evacuated. The GIS analysis indicates that the incident poses no threat to the park.

A number of scenarios can be analyzed for various locations, infrastructure designs, and chemical agents. Using this information, the EPC staff can determine the probable and most likely scenarios and can develop plans to mitigate potential hazards.

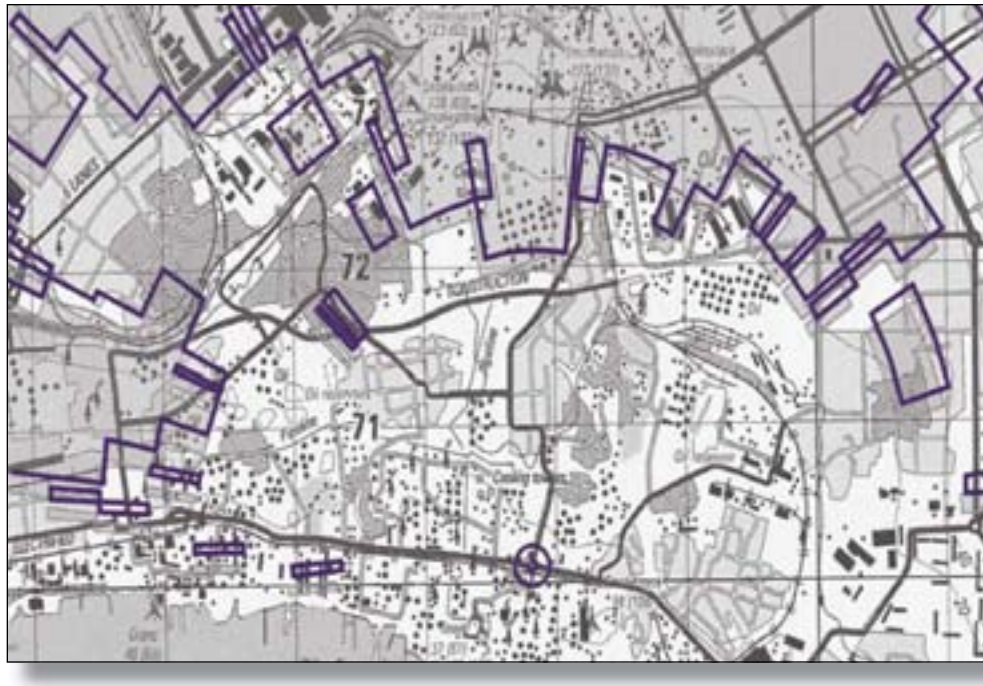

Figure 1. Sample line-of-sight analysis for critical infrastructure observation posts. The areas outlined in purple are those that cannot be observed from the intersection (within the circle).

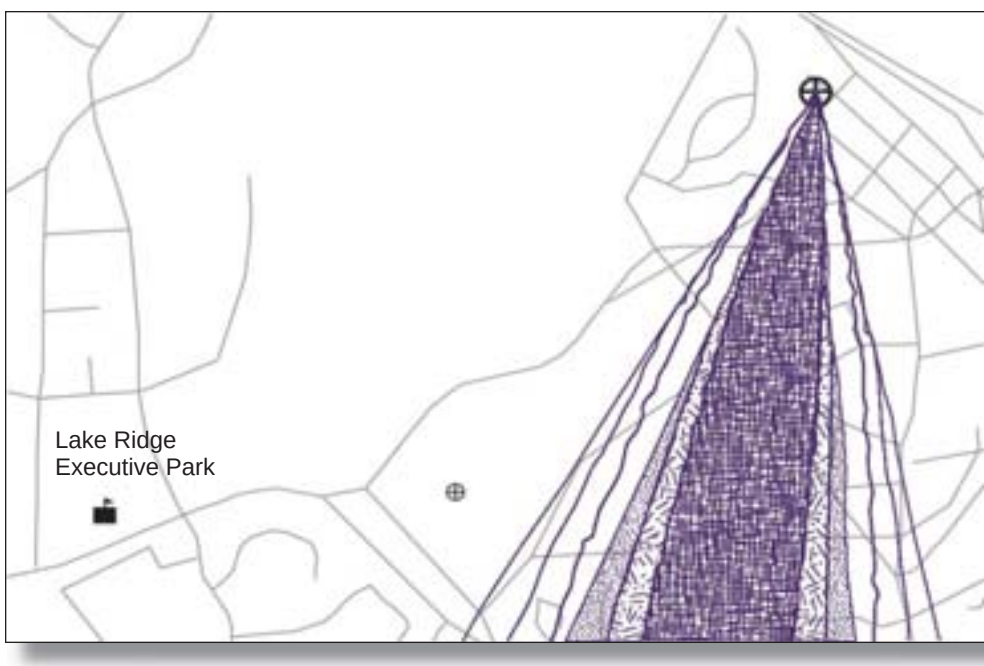

Figure 2. Downwind plot for predictive analysis within a populated area.

Conclusion

In the current operating environment, Chemical Corps Soldiers work with engineer and medical personnel to mitigate industrial and environmental hazards. Geospatial information allows for more effective mitigation of CBRN hazards and, consequently, improved force protection. Geospatial engineering and intelligence allow the EPC staff to better understand adversaries and the threats that they pose to military operations within an AO. Incorporating geospatial data into the planning process facilitates a synergistic approach to CBRN hazard mitigation.

Endnotes:

[1]FM 3-100.4, *Environmental Considerations in Military Operations*, 15 June 2000.

[2]GEOINT Publication 1-0, *Geospatial Intelligence (GEOINT) Basic Doctrine*, National Geospatial Intelligence Agency, Office of Geospatial-Intelligence Management, September 2006.

Reference:

FM 3-100.4, *Environmental Considerations in Military Operations*, 15 June 2000.

Major Ware is the executive officer of the 65th Engineer Battalion (Combat Effects), Schofield Barracks, Hawaii—the higher headquarters for the 71st Chemical Company. He has served as a combat, systems, electrical, and geospatial engineer. He holds an undergraduate degree in geography and graduate degrees in engineering and geospatial science.

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Maneuver Support Update

Integrated Unit, Base, and Installation Protection (IUBIP) Capabilities-Based Analysis (CBA). The United States Army Maneuver Support Center (MANSCEN) continues as the joint lead of the IUBIP CBA by completing the Joint Functional Solutions Analysis and Integrated Capabilities Documents. This work will support the development of solutions to force protection problems in CONUS and abroad. MANSCEN is the Army lead for the Maneuver Support Concept Capability Plan (CCP) and follow-on CBA. The CCP will serve as the baseline document to integrate maneuver support capabilities for the future modular force. The CCP also focuses on the application of integrated maneuver support capabilities from multiple Army and joint proponents and introduces a goal to develop a fully functional, seamlessly integrated and robust maneuver support capability across the force. MANSCEN is the Army lead for the Combating Weapons of Mass Destruction (CWMD) CCP. The CWMD CCP addresses the concept of future U.S. Army CWMD operations across a broad spectrum of tactical and operational CWMD-related missions. This CCP is confined to the U.S. Army concept for CWMD in the FY 2015-2024 timeframe.

The point of contact is Mr. Ken Garrett, (573) 563-7889, or <*kenneth.garrett@us.army.mil*>.

MANSCEN Fusion Center. The mission of the MANSCEN Fusion Center is to provide information needed by organizing, deploying, or deployed maneuver support units. For chemical, biological, radiological, and nuclear (CBRN); engineer; and military police units, the branch schools operate Knowledge Network sites, and we do not duplicate their efforts. But for maneuver enhancement brigades (MEB) or brigade special troops battalions (BSTB), this is your MANSCEN portal on Army Knowledge Online (AKO).

What it has – Once you get to the Fusion Center (directions below), you'll see a welcome message from LTC(P) Williams and links to the MEB and BSTB Community of Practice (COP). Each link will take you to a screen that has *Discussions, Files, Membership, Requests for Information (RFI)*, and *return links* to the Maneuver Support Knowledge Network (MSKN) and the Fusion Center main pages. The best sources for information are the *Files* link and the RFI button. We post general information, current briefings, and doctrinal publications here (under doctrine, organization, training, materiel, leader education, personnel, and facilities [DOTMLPF]). Most of the information has release restrictions, so you have to request access. We must do this to comply with operations security (OPSEC) policy, but once you have access you have access to everything on the site. If you don't see what you need or just want to ask a question, use the RFI button. This shows up in Joe Crider's e-mail as an MSKN RFI, letting him know that we have a question from an organizing, deploying, or deployed unit.

Where it is – From the AKO home page, go to the Quick Links pop-down menu at the top of the page and select *Knowledge Networks*. From the Knowledge Networks page, *Maneuver Support Knowledge Network (MSKN)* is the 7th icon link on the right side of the page; you'll probably have to scroll down. Once you find the MSKN home page, you'll want to bookmark the site. That command is under the *Options* pop-down menu on the upper right of the page (it's in small typeface). Alternately, you can get to MSKN by going down the organizations path: *AKO Home Page > ACOM > TRADOC > Centers of Excellence > Maneuver Support CoE > Maneuver Support Knowledge Network*. On the MSKN home page, you'll see a purple banner at the top with six buttons. The first three are links to the CBRN, Engineer, and Military Police Knowledge Networks and the source for their branch information. Under *Deployment Info*, the fifth button, is the MANSCEN Fusion Center.

Future plans – Later this year, the MEB Fusion Center will migrate to become the Maneuver Support Warfighter Forum, as part of a TRADOC-wide initiative on Warfighter Forums. If you're reading this after 2008, some of the navigation may have changed. But links from AKO's Knowledge Networks page and from Battle Command Knowledge System (BCKS) should remain solid. The Warfighter Forum effort will add full-time staffing for a bigger site and faster answers to your requests, so come check it out.

The point of contact is LTC (P) Charles Williams, (573) 563-7244, or <*chuck.williams@us.army.mil*>.

Standard Resource Code 01C. The United States Army Maneuver Support Center (MANSCEN) has

established a Position Special Reporting Code (PSRC) of 01C for the commander, deputy commander, executive officer, S-3, operations officer, liaison officer, and headquarters company commander of the maneuver enhancement brigade (MEB). PSRC 01C is approved for FY 2011 implementation. The MANSCEN Directorate of Training is working a training strategy for these officers so that MEB missions may be accomplished at the highest levels of performance. The strategy will address all training domains—unit, institutional, and self-development—and will be integrated with existing training courses and products. The training strategy is projected for completion in 3d quarter FY 2009.

The point of contact is Ms. Donna Grzyb, (573) 563-4121, or <*donna.grzyb@us.army.mil*>.

Maneuver Enhancement Brigade (MEB) Army National Guard (ARNG) Staff Support Team. Leader development continues to be the main effort within the Department of Career Studies Maneuver Support Training Division (MSTD). In addition to its normally scheduled instruction for officers and noncommissioned officers (NCOs), a new team—focused exclusively on assisting with leader and staff development for the MEB—was formed in June 2008. The formation of this team and its mission is the result of a coordinated effort between MSTD and the Maneuver Support Center (MANSCEN) ARNG liaison office. The program is designed to bring officers and NCOs to Fort Leonard Wood from throughout the ARNG for 6- to 12-month periods to provide training assistance to MEB commanders and their staffs.

The MEB ARNG Staff Support Team currently consists of three ARNG officers and one ARNG NCO. Their mission is to coordinate with the 16 ARNG MEBs that currently exist, or that are scheduled to stand up within the next 3 years, and offer leader and staff development assistance. This assistance may consist of doctrinal or functional capability briefings, MEB staff section or cell operations seminars, presentations or exercises focused on the military decision-making process, or a computer-simulated Warfighter-type exercise that may span several days and is designed to aid the commander and staff in synchronizing and exercising their staff processes. To provide the proper facilities and required personnel, Warfighter-type events will have to occur at Fort Leonard Wood. This will also require the MEB personnel to schedule the events during an annual training period or similar time span. Briefings, presentations, and seminar-type events can occur over a weekend drill period.

Officers and NCOs who are members of the MEB Staff Support Team may receive additional instruction and training from the MSTD's four instruction branches to better prepare for their mission. This may include attendance at courses offered by the Faculty Instruction Branch, such as the Army Basic Instructor Course (ABIC) and Small-Group Instructor Course (SGI). If necessary, they may also attend instruction provided by the Digital Instruction Branch and Simulation Support Instruction Branch. Additionally, when they are not actively engaged with MEB support, they may provide instructor support to the Maneuver Support Instruction Branch (MSIB) and assist students assigned to the MEB during the Captains Career Course capstone Warfighter Exercise (WFX III).

As of June 2008, the MEB team has coordinated for training support to four MEBs. The intent is to prioritize support to the MEBs that need it most, such as those mobilizing for deployment. However, consideration is given to all MEBs requesting support, and each request will be reviewed in an effort to assist them as necessary.

The point of contact for MEB staff support is Mr. Robert McFarland, (573) 563-5025, or <*robert.mcfarland@us.army.mil*>.

Modular Force Designs. The Combined Arms Center (CAC) hosted a General Officer Review Board (GORB) on 27-29 May to review and approve the modular division and corps headquarters designs. General William S. Wallace, United States Army Training and Doctrine Command (TRADOC) commander, chaired the GORB, and there were general officer representatives from the TRADOC schools and centers, Department of the Army G-3, United States Army Forces Command (FORSCOM), the National Guard Bureau (NGB), and all three corps headquarters. The division headquarters was increased by 10 personnel after the CAC Action Officer Workshop and the GORB. These recommendations are still pending final approval. In April 2008, the United States Army Maneuver Support Center (MANSCEN) Organizations Branch completed a Table of Organization and Equipment Unit Reference Book that provides detailed descriptions of chemical, engineer, and military police force structure. The distribution of this book is limited to grade E-7 and above, and digital copies can be obtained at <https://www.us.army.mil/suite/kc/8587909>. Over the next several months, the Organizations Branch will focus on force redesign updates on the maneuver support equities in brigade combat teams (BCTs) and within the functional branch organizations.

The point of contact is LTC Stephen Danner, (573) 563-6282, or <*stephen.danner@us.army.mil*>.

Standards in Training Commission (STRAC). Each year, unit commanders use the approved training standards and strategies in Department of the Army (DA) Pamphlet (PAM) 350-38, *Standards in Training*

Commission, to determine their training ammunition requirements for the following year's training events. Units use the Department of the Army Ammunition Requirements Tool (DAART) to review, validate, and submit their ammunition requirements to the G-3. Following review and consolidation by each Army command and Army service component command and validation by the Army Training Support Center (ATSC), STRAC requirements become the basis for training ammunition authorized by the G-3. The United States Army Maneuver Support Center (MANSCEN) STRAC manager updates changes in the Chemical, Biological, Radiological, and Nuclear (CBRN); Engineer; and Military Police Schools' chapters in DA PAM 350-38 each fiscal year (FY). The following changes for the FY09 STRAC, effective 1 October 2008, are due to new and modified strategies:

Chapter 6, Engineer

- Table 6-25 - Replaced Department of Defense Identification Code (DODIC) L592 with L367.
- Table 6-93 & 6-94 - Deleted from both tables, DODICs L602 was exchanged for LA53.
- Table 6-94 - DODIC L592 deleted and training devices altered.

Chapter 8, Military Police

- Table 8-13 - Table VIII and total rounds for qualification changed.
- Table 8-21 – Exchanged DODICs J007 Claymore for the K143 Claymore.

Chapter 9, Combat Support and Combat Service Support (CS/CSS) Weapon Systems *(Note: CBRN location)*

- No changes this FY.

The next Acquisition Modeling and Simulation Working Group (AMSWG) will convene in September 2008 at Fort Eustis, Virginia. There, the MANSCEN STRAC manager and school subject matter experts will present new strategies or changes to existing strategies that will then be presented to the United States Army Materiel Command Operations Center (AMCOC) in October 2008 for approval. This process is a semiannual event. Once approved, the strategies will be added to the Program Objective Memorandum (POM) for future Class V training munitions. The normal time for resources to be available to the field is 4 years from the date approved by AMCOC. *(Note: AMCOC is not responsible for the resourcing of TADDS for unit-type training.)* The AMSWG and AMCOC are also responsible for resourcing institutional programs of instruction (POIs), which go through the same semiannual process. Resourcing dollars for POI Class V normally take 12 months to reach the institutions.

The point of contact is Mr. Bobby Skinner, 573-563-6243, or <*bobby.skinner1@conus.army.mil*>.

Joint Acquisitions CBRN Knowledge System (J.A.C.K.S). Located at <*https://jacks.jpeocbd.osd.mil*>, J.A.C.K.S. is your single source for CBRN Defense Equipment information and support. The wide variety of information at this site makes it invaluable…everything concerning shelf-life information by lot number, advisory messages, fact sheets on every piece of equipment and help desk contact information offering 24/7 support. This site should be on every 74-series officer's and NCO's favorites list.

FAST Obscuration Grenade (FOG). The Rapid Equipping Force/Asymmetric Warfare Group received its first shipment for distribution in June and is scheduled to receive a second shipment in August. FOG is a bursting-type grenade equipped with a pull-safe device, as requested by FORSCOM to "increase Soldier confidence in their armament and equipment and negate the perceived need to tape grenades."

Urban Operations Kit (UOK). This kit has been approved for purchase by military police special reaction teams (SRTs). The UOK, a demolitions-type kit containing a wide variety of explosives and related support material tailored for the urban environment, was formerly authorized for engineers only. For information on how to acquire a UOK, contact OPM SKOT toll free at 1-877-4-PMSKOT or 1-877-476-7654, DSN 793-4765, commercial (309) 782-4765, e-mail <*rock-pm-skot@conus.army.mil*>.

Construction Equipment Virtual Trainers (CEVT) Hydraulic Excavator (HYEX) Level I Simulators. High-tech materiel improvements for engineer training are coming to the United States Army Engineer School (USAES). The contract for the 30 simulators with one year technical support was signed and awarded to Southwest Research Institute (SwRI) on 16 June 2008. The Program Executive Office for Simulations, Training, and Instrumentation (PEO-STRI) set up and coordinated the start-of-work meeting for 24 June 2008 at the SwRI facility in San Antonio, Texas. Representatives from MANSCEN/USAES, PEO-STRI, and SwRI were present along with John Deere, participating via teleconference at the SwRI facility. John Deere developers will be visiting Fort Leonard Wood to take high-fidelity pictures of the 230LCR HYEX for the interactive preventive maintenance walk-around lesson. Scheduled delivery date of the 30 simulators is 1 October 08.

Point of contact is Mr. Barrett Parker, (573) 563-7105, < *barrett-parker@us.army.mil>.*

MANSCEN Doctrine Update

U.S. Army Maneuver Support Center
Training and Doctrine Development Department
Doctrine Division

Publication Number	Title	Date	Description (and Current Status)
Publications Currently Under Development and/or Revision			
FM 3-90.31	*Maneuver Enhancement Brigade (MEB) Operations*	Pending (New Manual Under Development)	The MEB is designed as a command and control headquarters with a robust multifunctional brigade staff that is optimized to conduct maneuver support operations. As one of the five multifunctional brigades, the MEB is designed first to support division operations—but also echelon above division operations within the Army, joint, and multinational command and control structures—as well as responding to state or federal authorities as a part of civil support operations. **Development Highlights:** Core capability mission-essential tasks (Conduct maneuver support operations, conduct support area operations, conduct consequence management operations, and conduct stability operations.) **Status:** Under final adjudication (projected publishing date: October 2008)
FM 3-10	*Protection*	Pending (New Manual Under Development)	This is an Army keystone field protection manual and will establish doctrine for the protection warfighting function. It will expand on the protection concepts outlined in FM 3-0, *Operations*, to incorporate a broader approach to protecting the force. This manual establishes the Army's position on how to integrate and synchronize protection systems into operations. It also provides roles and responsibilities for the protection cell/group within the division, corps, and Army headquarters for planning, executing, and assessing protection operations. **Development Highlights:** Protection warfighting function, 12 protection tasks, and the protection planning process. **Status:** Under final adjudication (publishing date: depends on adjudication).

NOTES: Current (approved) publications can be accessed and downloaded in electronic format from the Reimer Digital Library at <*http://www.adtdl.army.mil*> or the MSKN website at <*https://www.us.army.mil/suite/page/500640*>. The manuals discussed in this matrix are currently under development. Drafts may be obtained during the staffing process or by contacting the MANSCEN Doctrine Division at: Commercial (573) 563-6238, DSN 676-6238 or <*susan.m.stevens@us.army.mil*>.

Maneuver Support Center Mission

The Maneuver Support Center, enabled by a world-class garrison at Fort Leonard Wood, creates warriors and develops leaders and capabilities that assure the mobility, freedom of action, and protection of the forces they support.

Writing for the Maneuver Support Magazine

The *Maneuver Support Magazine* is designed to provide a forum for exchanging information and ideas within the maneuver support community. We include articles on any of the multitude of capabilities, tasks, and processes associated with protection, movement, and mobility. Writers may discuss training, current operations and exercises, doctrine, equipment, history, personal viewpoints, or other areas of general interest to maneuver support personnel. Articles may share good ideas and lessons learned or explore better ways of doing things.

Articles should be submitted as double-spaced Microsoft Word documents. They should be concise, straightforward, and in the active voice. If they contain attributable information or quotations not referenced in the text, provide appropriate endnotes. Text length should not exceed 2,000 words (about eight double-spaced pages). Shorter after-action-type articles and reviews of books on maneuver support topics are also welcome.

Include photos (with captions) and/or line diagrams that illustrate information in the article. Please do not include illustrations or photos in the text; instead, send each of them as a separate file, with photos either in the .jpg or .gif format. Do not embed photos in PowerPoint. If illustrations are in PowerPoint, avoid excessive use of color and shading. Save digital images at a resolution no lower than 200 dpi. Images copied from a website must be accompanied by copyright permission.

Provide a short paragraph that summarizes the content of the article. Also include a short biography, including your full name, rank, current unit, and job title; a few of your past assignments, experience, and education; your mailing address; and a fax number and commercial daytime telephone number.

Articles submitted to the *Maneuver Support Magazine* must be accompanied by a written release by the author's unit or activity security manager prior to publication. All information contained in the article must be unclassified, nonsensitive, and releasable to the public. The *Maneuver Support Magazine* may be distributed to military units worldwide and could be accessible to nongovernment or foreign individuals and organizations.

We cannot guarantee that we will publish all submitted articles. They are accepted for publication only after thorough review. If we plan to use your article in an upcoming issue, we will notify you. Therefore, it is important to keep us informed of changes in your e-mail address and telephone number. All articles accepted for publication are subject to grammatical and structural changes as well as editing for style.

Send submissions by e-mail to <*leon.msmagazine@conus.army.mil*> or on a CD in Microsoft Word to: Managing Editor, *Maneuver Support Magazine*, 464 MANSCEN Loop, Suite 2661, Fort Leonard Wood, Missouri 65473-8926.

Top 10 MANSCEN Capabilities Development Priorities

1. Explosive/Toxic Hazard CBRNE Defeat
2. Maneuver Support Concepts, Organizations, and Systems
3. Protection
4. Consequence Management
5. Stability Operations, Infrastructure Development, and Nation Assistance
6. Detainee Operations
7. Nonlethal Capabilities
8. Joint Functional Capabilities (JFC)
9. Geospatial
10. Future Mobility and Support System

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