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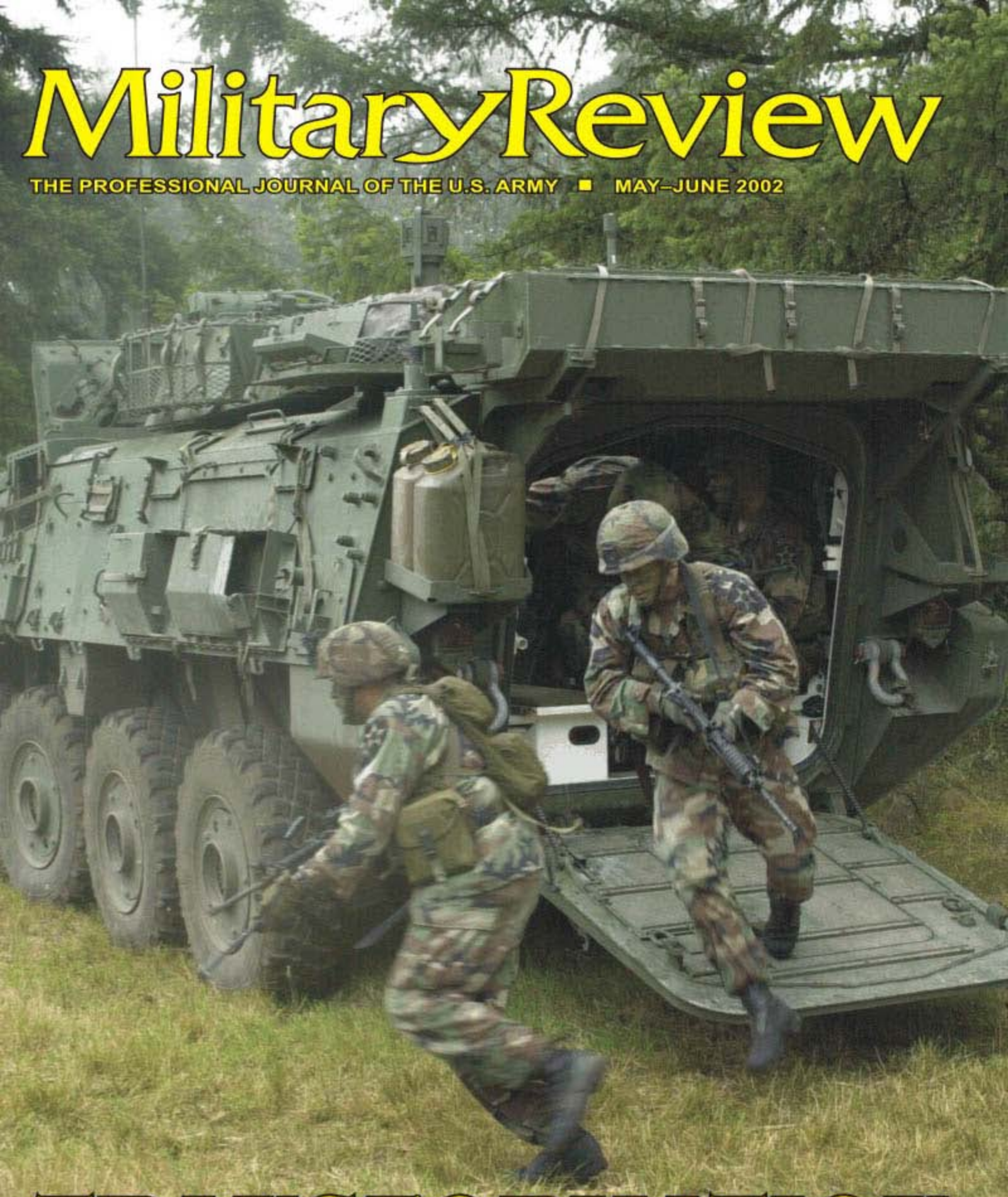

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CONTENTS

Hawaii's Homeland Security

Major General Craig B. Whelden, U.S. Army

The attacks of 11 September 2001 did not fit the popular paradigm of terrorist attack. No one expected U.S. Armed Forces to fight their next war on U.S. soil. The author describes steps U.S. Army, Pacific in conjunction with federal, state, and local governments and agencies are taking to deter or respond to terrorism in the Hawaiian Islands.

ON 11 SEPTEMBER 2001, I was at an Army conference at the Double Tree Hotel in Crystal City, Virginia, just across from the Pentagon, when we learned that two aircraft had struck the World Trade Center Twin Towers in New York. While we were attempting to verify and track the story, we learned that an explosion had just occurred at the Pentagon.

We ran outside to a huge black plume of smoke. I reached for my cell phone to call my wife to let her know that I was fine. I quickly discovered, along with thousands of other cell phone subscribers, that I could not connect. I ran up to my hotel room where I finally got through. I then went over to the Pentagon crash site to see what I could do to help.

I found cool heads in the midst of a chaotic scene, all trying to organize themselves. Hundreds of military and Department of Defense (DOD) employees were outside the Pentagon, trying to organize themselves into litter teams. First responders—emergency medical service teams, firemen, policemen, Pentagon security personnel, and the FBI—were working their lanes. All were trying to help, but it quickly became evident that there was no central point for overall coordination. I knew there would be a need for military support in the form of manpower, communications, and logistics, so I approached an FBI agent and asked, "Who's in charge?" After glancing around, he replied, "I guess I am?"

What I did not realize at the time, but discovered shortly afterward, was that what the agent really meant was that the FBI was in charge of the crime scene. The FBI was not in charge of the immediate crisis. Firemen, trying to put out the fire, were actually in charge of that particular task, and I found out later they typically provide the incident commander in these types of disasters. That was not clear to most of us at the time.

Meanwhile, policemen were securing the area, and medical teams were organizing themselves for triage operations while identifying routes in which to evacuate the wounded and locations for a temporary morgue. Search and rescue teams were assessing the building for the best way to find survivors, extract the dead, and stabilize the building for safe entry. Pentagon employees, both military and civilian, were organizing themselves into litter teams and were awaiting the word to enter the building—word that didn't come until well after they were relieved by soldiers from nearby Fort Myer, Virginia.

When I asked the same FBI agent if he had communications, he pulled out a cell phone, and his telling expression made clear that his phone had failed him more than a few times as well. Cell phones are unreliable in a large crisis situation because everyone aware of the incident is using them simultaneously.

In the first hour after the crash, there were at least two alerts to move away from the Pentagon because

of another inbound airplane purportedly targeting Washington, D.C. We learned later that it was United Flight 93, eventually forced down into a Pennsylvania field by heroic passengers, an act that undoubtedly saved many lives on the ground.

Over time, the U.S. Army cobbled together a command and control cell led by the 3d Infantry Regiment—the Old Guard—from Fort Myer. We placed its command vehicle in the center of the field, facing that burning, gaping hole in the Pentagon, an image that was becoming all too familiar. We then assigned each of the responding agencies a radio-equipped Army liaison officer. We told first responders to request military support through their liaison officers, who would communicate this need to the command post. The command post would then attempt to source that requirement from the many DOD installations from throughout the Military District of Washington.

US Army

A small aircraft response and security meeting shows representatives from the Army, Navy, Air Force, Coast Guard, Marine Corps, State Civil Defense, Oahu Civil Defense Agency, FAA, Aviation General Council, Airport Security, Honolulu Police and Fire Departments, and Hawaii National Guard.

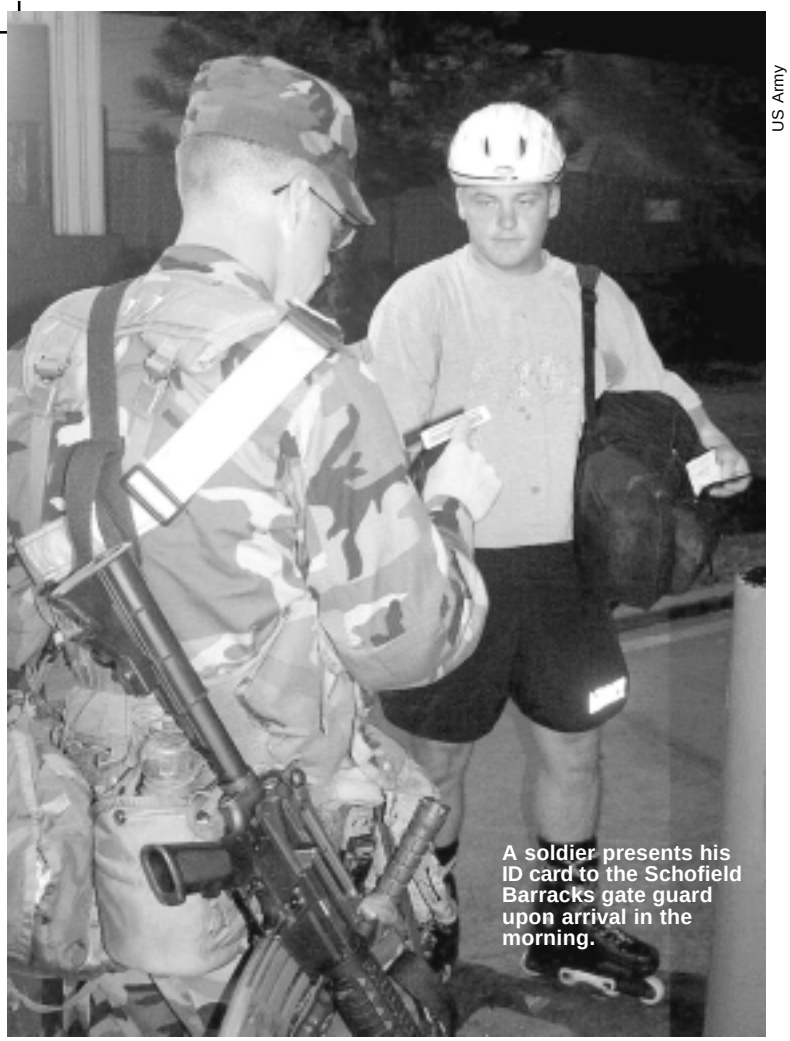
JRAC-HI has fine-tuned its procedures for providing military support to civil authorities (MSCA) in the event of a natural or man-made disaster. As the executive agent for MSCA in Hawaii, American Samoa, and neighboring islands, JRAC-HI provides a defense coordinating officer to coordinate military support of civilian consequence management operations.

Over the next few hours, the Army along with many other agencies provided medical support, food, water, fuel, generators, lights, cabling, shoring material, and manpower in support of a multiagency effort, and by nightfall, the field in front of the crash site looked like a miniature city.

Why do I tell this story? It is because in the aftermath of the tragic incidents of 11 September, we learned that some of the same challenges exist right here in Hawaii and, I suspect, in most other communities across the country. The U.S. military is trained and equipped to fight this nation's wars, but none of us expected that the nation's next war would be fought within the geographic borders of the United States. Our very heartland is under attack, and all of us must be as ready as possible for the next strike. In one sense, the efforts in the United States are more complex and more uncertain than those faced by the brave and very capable U.S. forces in and around Afghanistan. We do not know when or where the next strike will occur, so we must be prepared to detect, deter, and defend those assets that will ensure our ultimate victory in this war.

The U.S. Army, Pacific (USARPAC), in partnership with local, state, and federal authorities, has developed a plan of preparedness for the state of Hawaii. The commander in chief, Pacific Command, has identified USARPAC as the executive agent for joint rear area coordination (JRAC). This task is normally accomplished in a wartime theater of operation, but in this case, it is being accomplished for Hawaii. Teaming with local and state civil organizations and federal agencies, JRAC-Hawaii (HI) has accomplished a significant amount since 11 September.

JRAC-HI is protecting its military installations by reducing and restricting entry points using roving patrols. Guard duties have completely changed. Guards must now understand the changing dynamics of a more dangerous world and must learn to expect the unexpected. Military installations worldwide are now on the front lines and are the subject of surveillance and probes more than ever before. Guards must be more alert to activities both on and off the installations, and they must constantly vary security procedure patterns to eliminate predictability. They must also be linked to local law enforcement and must be the beneficiaries—and target audience—of a regular joint and interagency intelligence summary. Because of these changing conditions, JRAC-HI reinstituted more formalized



US Army

A soldier presents his ID card to the Schofield Barracks gate guard upon arrival in the morning.

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guard mounts and instructions that are tailored to the current operational environment.

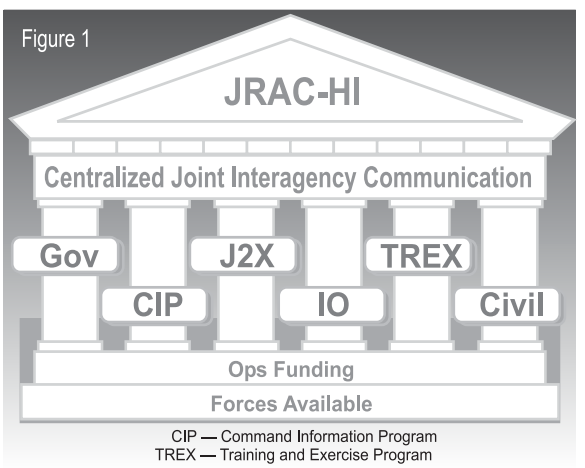
JRAC-HI has identified mission-essential or vulnerable areas (MEVAs) both on and off installations. MEVAs are facilities and capabilities that are essential to accomplishing the military mission. The MEVAs have been thoroughly assessed and security needs addressed. Tailored after general defense plan battle books from the Cold War in Europe, MEVA folders detail every aspect relevant to defending these critical sites. Local civil authorities have done the same with more than 150 of their own MEVAs, and both the civil and military authorities regularly conduct site surveys.

JRAC-HI has fine-tuned its procedures for providing military support to civil authorities (MSCA) in the event of a natural or man-made disaster. As the executive agent for MSCA in Hawaii, American Samoa, and neighboring islands, JRAC-HI provides a defense coordinating officer to coordinate military support of civilian consequence management operations. Even before 11 September, JRAC-HI maintained a close relationship with local and state government leaders who can leverage many standing MSCA concepts and plans as the JRAC operation comes together. JRAC-HI's participation in steering committees and plenary groups, such as the Hawaii Emergency Preparedness Executive Committee, the Hawaii Energy Council, and the Joint Armed Services/State of Hawaii Civil Defense Coordinating Committee, is instrumental in sharing information and developing joint and civil-military solutions to emerging challenges.

JRAC-HI has established quick reaction forces (QRFs) drawn from both U.S. Marine Corps and Army units. These QRFs can move on short notice by air or road to any place in the state to provide additional security or to assist in any other way. While we await adjudication at the national level on the procedures for employing these forces in domestic situations, we are regularly conducting joint training with civil authorities.

JRAC-HI has worked to identify seams in its collective efforts to secure Hawaii and the great people who live here. This coordination is taking place with all the military services in Hawaii, state and local civil defense, U.S. Coast Guard (USCG), National Guard, Honolulu Police Department, fire departments, and a host of other local and federal government agencies such as the state health and transportation departments. Also included in this effort are the FBI, Immigration and Naturalization Service (INS), U.S. Customs Service (USCS), and the Federal Aviation Administration (FAA) as well as selected private firms and enterprises involved in supporting Hawaii's critical infrastructure. The Joint Interagency Planning Group, established by USARPAC within days of the attacks, has

Figure 1



CIP — Command Information Program
TREX — Training and Exercise Program

US Coast Guard

A utility boat from Coast Guard Station Honolulu escorts the USNS *Sumner* out of Honolulu Harbor.

Hawaii has geographic advantages because of its isolation that affords tighter control and access; a large military presence with a military commander in chief; all four armed services; and the USCG in close proximity, already accustomed to working together and with local, state, and federal agencies and officials. Just as important, however, is the spirit of ohana, or family, that helps people transcend normal bureaucratic and cultural barriers.

been the principal driver behind this effort.

CINCPAC fielded an automated system called area security operations command and control (ASOCC). This system is an interactive computer-based system designed to provide situational awareness to commanders and collaborative planning capabilities for use with civil authorities. ASOCC can provide graphic and imagery-based photographs and maps with supporting data, collaboration capabilities, a log and alert function, the ability to display time-phased force deployment data, and a means to access and display updated information from web-based status boards and databases. ASOCC is currently fielded at USARPAC and at the U.S. Pacific Command (USPACOM). It provides JRAC-HI with a common operational picture that monitors friendly forces' developing situations and activities, both military and civil. Hawaii plans to acquire 12 more systems for fielding to the civilian sector.

USPACOM has also fielded a communications interface system called the Pacific Mobile Emergency Radio System (PACMERS). PACMERS establishes a narrow-band frequency, land mobile radio system in Hawaii and Alaska. This system will allow first-responding emergency medical service providers, fire departments, and police departments to communicate securely with the military and each other through interoperable radios. PACMERS has two critical advantages: it is a radio "trunked" system, and it can interface to emergency 911 systems and other legacy networks. A trunked system is one that efficiently shares frequencies, which enables multiple, separate talk groups to access the network. With PACMERS, there may be as many as 149 talk groups on the network, some of which will be dedicated to homeland security. PACMERS is also air- and sea-compatible.

Lieutenant General E.P. Smith, commanding general, USARPAC, has stated that "the two key pillars of JRAC-HI are intelligence fusion and standardized training models." To support these pillars, JRAC-HI has taken the following actions.

JRAC-HI stood up a 24-hour joint intelligence support element and a counterintelligence and law enforcement coordination cell to fuse, synchronize, and coordinate force-protection requirements; local law enforcement information and activities; and, as the law permits, selected domestic intelligence and information across a broad spectrum of sources. The information is analyzed and the results are made available quickly and efficiently using secure Internet links to military audiences and the FBI, and a law enforcement-sensitive category of the report goes to the civilian sector. This unclassified version

US Army

Chemical specialists analyze samples taken by a decontamination team during a drill of the weapons of mass destruction emergency response team.

JRAC-HI has established a multiagency training program and has already completed seven major training exercises with more planned. Scenarios are designed to exercise quick-response, general security awareness and military support to civil authorities. JRAC-HI will continue to improve these procedures through more complex and inclusive exercises.

uses a password-protected site on the Asia-Pacific Area Network, a website that USPACOM manages. It is disseminated to local, state, and federal law enforcement agencies; the Honolulu mayor's office; the Hawaii state governor's office; the USCS; the INS; the Federal Emergency Management Agency; state civil defense; and the outlying islands' county civil defense and police departments.

JRAC-HI has established a multiagency training program and has already completed seven major training exercises with more planned. Scenarios are designed to exercise quick-response, general security awareness and military support to civil authorities. JRAC-HI will continue to improve these procedures through more complex and inclusive exercises.

JRAC-HI worked with state civil defense to develop a civilian version of the military's force-protection condition rating system for use in civilian communities. Within 30 days of 11 September, Hawaii established a color-coded system that the Office of Homeland Security used as the model to develop the national Security Alert System.

JRAC-HI is working with all municipal, state, and federal agencies to help establish an FBI-led joint terrorism task force (JTTF), a task directed by the U.S. Attorney General well before 11 September, and with a time line to have every office nationwide established by 2005. This very important office will open in Honolulu during summer 2002. DOD's intelligence role in JTTFs should capitalize on two of our core competencies: our ability to electronically move large amounts of information securely and our analytical capabilities.

JRAC-HI instituted a significant information operations campaign and outreach program to inform the community and its leaders about JRAC-HI and how it is linked to civilian government efforts.

All of these initiatives have been a challenge to implement, as these agencies have not historically worked together. What is being done in Hawaii is a microcosm of what Director of Homeland Security Tom Ridge is facing on a national scale. Hawaii has geographic advantages because of its isolation that affords tighter control and access; a large military presence with a military commander in chief; all four armed services; and the USCG in close proximity, already accustomed to working together and with local, state, and federal agencies and officials. Just as important, however, is the spirit of ohana, or family, that helps people transcend normal bureaucratic and cultural barriers. Because of the unique circumstances in Hawaii, we are quite possibly ahead of the national effort. Even so, that does not mean Hawaii cannot use help. For instance, we could—

- Deploy, subject to legal approval, remotely operated, closed-circuit cameras to zoom in on suspicious activity and take still photography that could

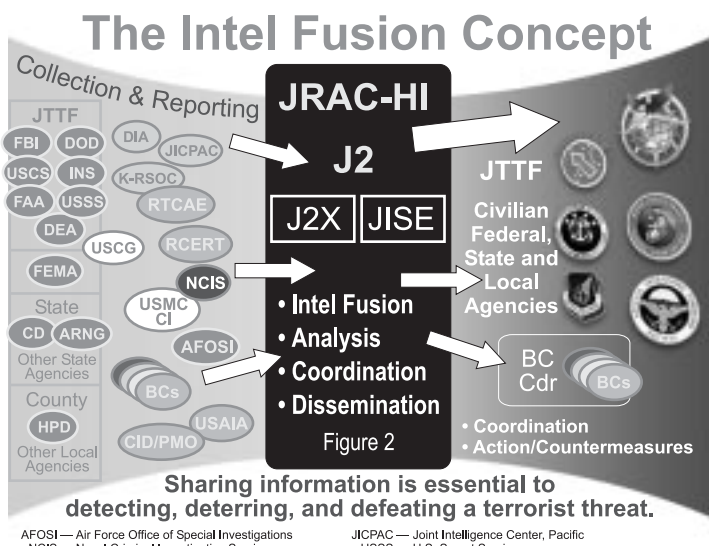


Figure 2

then be compared rapidly against a national database of either faces or other criteria such as vehicles and license plates.

- Employ detection dogs or electronic sniffers that can quickly detect explosive, chemical, or biological materials.
- Reconsider the way local area networks are currently linked to determine which municipal, state, or national networks should be in the loop.
- Establish simple, secure, web-based training for those on the front lines, whether civil or military. This training would be available across military, interagency, state, and local boundaries to ensure one standard and eliminate seams.
- Build an enterprise system that pulls diverse networks under one umbrella to ensure we have a common database and the ability to move data efficiently from one network or database to the other.
- Institute a national standard for driver's licenses with biometric identification features so that they can unequivocally be linked to their owners.

We need to continue to break down bureaucratic barriers that may exist and realize that this enemy will be looking for seams to exploit. While we have made a good start in Hawaii, I suspect there is inevitably still some resistance in some quarters that needs to be overcome. The events on 11 September changed the way we view national security in ways we could only have imagined just a few months ago. The nation must understand that we are truly at war, and that this war on terrorism is a long-term investment that requires mustering collective talents and skills, and an unprecedented, seamless, permanent fusion of municipal, state, and federal capabilities. We are all anxious to see what the Office of Homeland Security will produce.

One of the things we absolutely cannot afford is to allow the American public to become complacent or impatient. President George W. Bush and other leaders constantly remind us that this war on terrorism is only in its initial stage. We have a long road ahead.

The United States has done a significant amount of damage to the al-Qaeda base of operations in Afghanistan, but this international terror network exists in many other countries across the globe—including our own. As Bush stated, "we will not falter . . . and we will not fail." Americans have a long history of rallying around their flag in times of crisis. Millions of Americans have heeded the call to serve this flag and the nation it represents.

Service to nation is one of the powerful, central themes of Steven Spielberg's film "Saving Private Ryan." It is the story of a simple soldier, a fictional character, who epitomizes the values of the American soldier that *Time* magazine named as one of the most prominent icons of the 20th century. In the movie, three of four brothers are killed in combat, and the remaining son—Private James Francis Ryan—has jumped into France with the 101st Airborne Division. A squad of Rangers, led by Captain John Miller, is sent to find him and bring him back.

After days of searching, Miller finds Ryan among a handful of paratroopers defending a bridge against a larger, more powerful German force. Miller explains to Ryan that his three brothers have been killed in combat and that Miller's orders are to bring the remaining son home. Ryan refuses to leave, saying, "Tell [my mother] I was here, and I was with the only brothers I have left. There's no way I'm going to leave this bridge."

Miller and his men join the paratroopers. Although the Americans defend the bridge successfully, Miller is mortally wounded. As he lay dying, Miller whispers into Ryan's ear, "Earn this . . . earn this," meaning, "Do not let my death or the deaths of my men be in vain." The movie ends with Ryan, surrounded by family, visiting the Normandy graves of his comrades 50 years later. With tears in his eyes, he turns to his wife and says, "Tell me I've led a good life. Tell me I'm a good man," seeking affirmation that he has indeed earned Miller's sacrifice.

"Saving Private Ryan" does indeed affirm the value of the sacrifice of all who have fallen resisting tyranny and oppression. The movie says a lot about the institution to which many of the greatest generation belonged—the United States Army—the one to which many of us belong today. And Ryan personifies the values of that institution: loyalty, duty, respect, selfless service, honor, integrity, and personal courage. These core values enable us to live in the greatest country on Earth. Do not believe for a second that our forefathers are not watching to see how we respond to this latest threat to our nation. It is the duty of every American to ensure we do not let them down. I know that we will not because we are Americans. ***MR***

Major General Craig B. Whelden, U.S. Army, is the deputy commanding general, U.S. Army, Pacific, Fort Shafter, Hawaii. He received a B.A. from Purdue University and an M.A. from Webster University. He is a graduate of the U.S. Army Command and General Staff College and the U.S. Army War College. He has served in various command and staff positions in the United States and Germany, including commanding general, Community and Family Support Center, Alexandria, Virginia; deputy director for operations, National Military Command Center, the Pentagon, Washington, DC; commander, 98th Area Support Group, Würzburg, Germany; and chief of staff, 3d Infantry Division, later reflagged as 1st Infantry Division, Würzburg.

Transformation Under Attack

Lieutenant General Frederic J. Brown, U.S. Army, Retired

THE U.S. ARMY TODAY is fully engaged in Transformation on a scale that is not unlike the Army's successful rebuilding after the Vietnam war that culminated after Operation Desert Storm. At that time, the essential challenge was maintaining readiness to defeat the Warsaw Pact while rebuilding the Army. This post-Vietnam change was fundamentally linear. There were no basic surprises in doctrine, organization, equipment, or materiel. They were more or less simply improvements to what had won World War II.

Not so today. Now a second Transformation proceeds. This Transformation faces two tasks simultaneously: responding to evolving conventional threats and novel asymmetric attacks both at home and abroad, and transforming the Army's conventional forces to conduct substantially different joint and combined operations in the future. Success in the second Transformation poses several interrelated requirements that must be mastered simultaneously. Separately, each of these requirements is a significant challenge for U.S. land power. Together, they pose a formidable challenge, greater than those the Army faced in the post-Vietnam transformation. The new requirements follow:

- Sustain the abiding characteristics of America's Army.
- Regenerate the Army's current quality land power capability, which has been impaired by a decade of resource anemia. There is an abiding need to repair a decade of consumed capability with scant regeneration. Significant seed corn has been consumed.
- Adapt rapidly to defeat terrorism globally in a campaign that promises to be years, if not decades, long.[1]
- Sustain and probably accelerate current Transformation programs.
- Maintain a substantial general conventional mobilization capability to shift from a quality to a quantity military force.

None of these is a showstopper in itself, but each needs to be weighed in combination and incorporated in adjusting to Transformation under attack, a transformation taking place in the aftermath of the Cold War and 11 September 2001. All that the Army accomplishes is achieved as America's Army—land power molded by a unique combination of requirements in the United States as a democracy, a nation, a state, a federal republic, and a continent.[2] These requirements generate certain development imperatives. They will be mandated by legislative oversight should executive direction be absent. They are absolutely prescriptive in channeling the energies of Transformation. The nation neglects them at its peril.

Despite notable efforts emerging to rebuild equipment, the psychology of a decade of drawdown endures. The consequences of this psychology are aging legacy forces, disturbing leader attrition, and seriously questioning the professional ethos. All these combine to moderate the institution's responsiveness.

Transformation must overcome the burdens caused by a decade of underresourcing. The transformation following Vietnam instilled individual and unit proficiency defined by task, condition, and standard. This proficiency was proofed in quasi-combat at the combat training centers (CTCs). No Army has ever known in such detail what is required to be combat-ready. This knowledge and readiness stands in contrast to what is occurring in many units today stressed by intense commitment, personnel instability, and insufficient home station training opportunities. General Dennis J. Reimer, Chief of Staff, U.S. Army, (CSA) in the mid-1990s, warned for years that inadequate resources were causing the Army to put the horse away wet.

Despite notable efforts emerging to rebuild equipment, the psychology of a decade of drawdown endures. The consequences of this psychology are aging legacy forces, disturbing leader attrition, and

seriously questioning the professional ethos. All these combine to moderate the institution's responsiveness.[3] The Army has experienced this sort of ennui before, most recently in the early 1970s, when pundits moped that the Army was on an inevitable decline evidenced by contraction from 13 to 10 or fewer divisions. Then CSA Creighton W. Abrams successfully reversed the psychological gloom by mandating the Army's expansion to 16 divisions. Countering reactive dismay today is not an insurmountable problem, but it requires constant attention in a force that should rightfully consider itself to be the premier quality Army in the world.

The transformation following Vietnam instilled individual and unit proficiency defined by task, condition, and standard. This proficiency was proofed in quasi-combat at the CTCs. No Army has ever known in such detail what is required to be combat-ready. This knowledge and readiness stands in contrast to what is occurring in many units today stressed by intense commitment, personnel instability, and insufficient home station training opportunities.

Preeminence of quality not quantity poses another problem. Potential major-power competitors with sizable and improving armies are out there. Prudence and effective deterrence dictate that the nation maintain the ability to expand its Army rapidly through massive World War II-like mobilization. In such an expansion, the Army shifts its reliance on quality forces to relying on quantity forces. Credible expansion hedges—policies or programs required to restore a known deficiency in ready military capability—across each doctrine, training, leader development, organization, materiel, and soldiers (DTLOMS) imperative are required.

An overarching strategic imperative is constituting the Army philosophically and practically so it can "turn on a dime" to meet threats across the spectrum of conflict, from global world war to isolated instances of asymmetric terrorism. Such a capability is akin to maintaining robust health while containing a dangerous, long-term infection that affects both domestic security and international security interests. While advancing on multiple fronts for a prolonged period is challenging, the difficulty can be eased by leveraging two important military organizations—the U.S. Army Training and Doctrine Command (TRADOC) and Special Operations Command (SOCOM)—and by drawing on the boundless potential of the Army National Guard (ARNG), the nation's traditional hedge against a small standing army or the requirement for a large army as was needed for Word Wars I and II. Doing so exploits the abiding strengths of America's Army. A skillful combination of policies and programs using these three sources should respond fully to the challenge.

TRADOC is institutionalizing balanced service support to regenerate and rebuild existing forces and develop future forces. For almost 3 decades, TRADOC has been a proven incubator of innovation. To those roles now add the overwatch of mobilization hedges—spiral support of the six DTLOMS imperatives, from Objective to Interim to Legacy to hedge forces.[4] Transformation becomes continuously exploiting the unique advantages of America's Army. SOCOM possesses highly credible, mission-focused, joint unit excellence. It demonstrates extraordinary innovation and competence in fighting state terrorism. Elite forces mounted on Afghan horses directing precision munitions are just the tip of the iceberg of the highly adaptive tactical innovation SOCOM forces have achieved. The ARNG is the land power muscle that reinforces state and local authority to achieve homeland defense, all the while reinforcing standing federal land power as it transforms.

TRADOC, SOCOM, and the ARNG can be the vital enablers of Transformation. TRADOC ensures DTLOMS-balanced land power prepared for conventional and asymmetric conflict from objective forces to hedges. SOCOM effectively shapes new joint warfighting capabilities. The ARNG strengthens homeland defense in conjunction with federal, state, and local authorities.[5] The Army—Active component (AC), Reserve component (RC), and ARNG—operates globally in joint and multinational coalitions to defeat terrorism in all its forms.

TRADOC

TRADOC is the guardian for the integrated development of the six DTLOMS imperatives and the vehicle for hedge capability assimilation. TRADOC's authority to assign responsibility and authority to organizations to balance development enables DTLOMS' horizontal coordination to take place across commands. This focus, when tied to the CTCs' mission to "test, fix, test" in the caldron of quasi-combat, serves both evolutionary and revolutionary spiral development. Together, TRADOC training centers and CTCs become the wellspring of tactical innovation, an innovation that has been proven most recently by the successes of digitization through Army warfighting experiments and the interim brigade effort. Among other things, this organizational precedent among armies globally can provide—

Leaders and staff reconnoiter the terrain during a training exercise. Planning groups such as this are the precursor to leader teams that may supplant individual commanders to lead units that are increasingly interagency and multicultural.

US Army

Increasingly, teams of leaders dominate effective C2. This is predictable with the advent of near-revolutionary impacts of vast improvements in leader communication capabilities. The next breakthrough in C2 is likely to be improving Army unit leader teams into high-performing, joint and combined, cross-cultural leader teams. . . . All Objective Force-level capabilities could be designed to plug in to strike forces to provide the niche-dominating combination of BOS appropriate to any particular military force requirement across the spectrum of conflict, conventional to asymmetric.

- Intensive research, development, test, and evaluation in each Army area of Title 10 responsibility.
- Leader and leader team education and training directly focused on leading edge warfighting. Preparing highly proficient individual leaders is no longer sufficient. Increasingly, teams of leaders dominate effective command and control (C2). This is predictable with the advent of near-revolutionary impacts of vast improvements in leader communication capabilities. The next breakthrough in C2 is likely to be improving Army unit leader teams into high-performing, joint and combined, cross-cultural leader teams.
- Sustained quasi-combat learning experiences for all commissioned and noncommissioned officer leaders (AC/RC)—the original purpose of the National Training Center.

TRADOC can continually provide proven state-of-the-art DTLOMS for the current Objective, Interim, and Legacy Forces as well as maintain hedge capability from quality to quantity capabilities in each aspect of DTLOMS. In effect, TRADOC is the Transformation center of gravity, nurturing the rebuilding of the Legacy Force from reactive anemia to proactive initiative, a function comparable to what TRADOC accomplished for the entire Army after Vietnam.

TRADOC can enable hedges while focusing responsive futures development. The primary vehicle for futures is the AC; for hedges, the RC. In effect, TRADOC becomes the guardian, and professional conscience, for the various 5- or 10-year rules implied in all hedge strategies.[6] Simultaneously, TRADOC can focus DTLOMS-integrated support to land power fighting terrorism such as doctrine, tactics, techniques, and procedures (DTTP) for rapid leader team building across multiple multinational organizations or effective doctrine for global counterterrorism, including weapons of mass destruction (WMD). The same can be provided for the various National Guards responding to their particular states' often unique security needs.[7]

Finally, TRADOC serves as the sparkplug for revitalized professionalism by significantly improving the professional development of leaders and leader teams. Leader traits can be instilled at the institution, cultivated while in TRADOC-supported units via distance learning, and brought to fruition in the experiential learning environments of the CTCs.

To organize its objective forces, the Army must use organizational principles that are different from those used to design legacy ground maneuver organizations. . . . This must change. The Army should incorporate an organizational structure of core fighting teams . . . with multiples of four to six leader teams (E4 and above). These comprise cohesive core fighting teams to which additional capabilities can be added as required to form a unit of action—the squadron or battalion.

SOCOM

Since Vietnam, Army support to special operational forces has added tremendous versatility to the battlefield operating system (BOS) of maneuver. The Army's commitment to light, flexible maneuver forces is apparent in creating the light infantry division (LID), standing up a third Ranger battalion and a Ranger regimental headquarters, and establishing the Delta Force. A model of cascading excellence is evident in the relationship among these organizations. That is, when compared to each other, these units reveal an increased refinement of capability within the maneuver BOS. Each of the six DTLOMS imperatives is improved when it moves from one of these ground maneuver organizations to the next—from LID to Ranger or from Ranger to Delta. Specifically, improvements follow:

- Increasing leader and leader team competence through intensified training.
- Adjusting assignment policies to sustain the excellence of a particular subordinate unit's mission performance such as stabilizing leader teams through repetitive regimental or squadron assignments.
- Highly selective leader accession policies.[8]
- Accelerating acquisition of the most recent equipment and materiel through direct coordination with research and development (R&D) organizations.
- Flexible organizational frameworks that are responsive to the immediate tactical situation.

Add other types of infantry, such as mounted, parachute, or air assault, to this combination and one might view the U.S. infantry's evolution as a spiral of increasing competence and capability. It is a useful and practical example of maintaining infantry capability from hedge (RC-ARNG infantry units) to Objective Force (SOCOM—Ranger, Special Forces, Delta, and similar organizations). The implications of the force development of the traditional compositions of U.S. infantry are important to the future of all BOS.

This pattern of increased excellence culminating in SOCOM joint attack forces could establish the pattern for the Objective Force's core capabilities—strike forces, units of action, or whatever name the Army's senior leadership decides. That is, brigade-sized organizations, positioned globally, will be ready for rapid commitment as part of a joint force across the spectrum of likely conflict. These forces seem likely to be oriented toward counterterrorism initially.[9] Now apply similar cascading excellence to other BOS:

Fire support. Tailored warheads, precision guidance, space sensors, and a wide range of effects will evolve. The scope includes much expanded target acquisition through tactical to strategic unmanned aerial vehicles, improved passive (undetectable) target acquisition, and multiple-path access to air power such as was demonstrated very effectively with B-52s and joint direct attack munitions (JDAM) in the recent Afghan campaign.

Flexibility in means extends to the nature of the munitions themselves. Extraordinary precision of air power delivery of current high-explosive munitions approaches the battlefield effects of small tactical nuclear weapons. Munitions alternatives should include wide variations in lethality. Improved fire support should be nonlethal as well as lethal across the range of potential weapons. Current constraints notwithstanding, nonlethal biological and chemical weapons (disabling but not lethal) might be exceedingly useful fire support capabilities when conflict moves into urban areas.

Combat service support (CSS). Logistics will incorporate such efficiencies as reducing supply requirements; inventorying in motion from the continental United States to consuming military units; and significantly reducing daily force sustainment requirements for petroleum, oils, and lubricants; ammunition; and spares. Leading edge civilian-related logistics capabilities are maintained in each area of competence. USAR capability, maintained at the forefront of U.S. commercial state-of-the-art logistics, would support strike forces.

Intelligence. Formerly, intelligence and electronic warfare (IEW) at each echelon focused initially on supporting traditional land power warfighting. Contemporary IEW, in conjunction with other U.S. and multinational intelligence organizations, provides highly responsive intelligence support to local political, military, and law enforcement organizations fighting terrorist threats and to conventional mid-intensity tactical operations. For example, there should be expanded links to state and local intelligence organizations to provide timely, quality intelligence support to ARNG units that are committed to state homeland defense missions.

C2. The best C2 would consist of creating and sustaining highly proficient leader teams drawn from the variety of military and civilian organizations and cultures that need to be synchronized to defeat terrorist organizations employing WMD. For international terrorism, these teams could be composed locally to meld the direction of diverse organizations. For homeland defense, the various state ARNGs would support similar municipal, county, or state counterterrorist organizations formed by respective executive authority.

Note the emphasis on leader teams, not solely on individuals. Preparing highly proficient individual leaders is no longer sufficient. Increasingly, teams of leaders dominate effective C2. This is predictable with the advent of near-revolutionary impacts of vast improvements in leader communication capabilities. The next breakthrough in C2 is likely to be extension of improving Army unit leader team creation into high-performing, joint and combined, cross-cultural leader teams. All Objective Force-level capabilities could be designed to plug in to strike forces to provide the niche-dominating combination of BOS appropriate to any particular military force requirement across the spectrum of conflict, conventional to asymmetric. Often, the composition will change as the fight progresses. Those are the roots of the evolving Army requirement for highly adaptive, self-aware leaders and leader teams at all echelons.

Each BOS would maintain Objective, Interim, and Legacy Forces and would support such parallel capabilities that might be essential to support multispectrum operations of all kinds. New BOS might emerge. Examples of newly emerged BOS could include information operations, negotiations, multicultural team building, or terrorist neutralization operations. New multispectrum DTTP will be required for each new BOS:

- Objective Forces are the best of the best—extraordinary quality.
- Interim Forces are experimental, preparing with CTCs and the R&D community for the next Objective Force.
- Legacy Forces are the Objective Force of 20 to 40 years ago, with Legacy likely to be the high end of the hedge force. That is the expansion base for building the hedge to mobilization quantity in each BOS.[10]

Combining SOCOMs and TRADOCs Strengths

Both SOCOM and TRADOC are important organizational initiatives, but how could they combine to create a whole that is much greater than the mere sum of the parts? How would these concepts combine to translate to relevant new capabilities? How much introduction of what at each echelon, when?

To organize its objective forces, the Army must use organizational principles that are different from those used to design legacy ground maneuver organizations.[11] The basic legacy practice used the maneuver battalion as the basic building block around which were organized routinely other combat, combat support, and CSS functions. This must change. The Army should incorporate an organizational structure of core fighting teams similar to the Delta Force troop-level organization with multiples of four to six leader teams (E4 and above). These comprise cohesive core fighting teams to which additional capabilities can be added as required to form a unit of action—the squadron or battalion. The squadrons and/or battalions combine to form the regiment or brigade, which is joint and potentially combined, to become the next higher echelon. The essential organizational characteristic should be common DTTP and personal communications capability for all soldiers. These two characteristics would enable the organizations to respond easily to change; that is, the demonstrated ability to change rapidly, to respond to new opportunities or new dangers, conventional or asymmetric.

An overarching strategic imperative is constituting the Army philosophically and practically so it can "turn on a dime" to meet threats across the spectrum of conflict, from global world war to isolated instances of asymmetric terrorism. . . . While advancing on multiple fronts for a prolonged period is challenging, the difficulty can be eased by leveraging two important military organizations—TRADOC and SOCOM—and by drawing on the boundless potential of the ARNG.

The Army needs highly variable organizations. When added to core fighting teams, AC, RC, civilian, and contract personnel provide highly competent, cohesive teams organized by BOS. The teams must establish habitual associations to form and sustain high performance. Furthermore, plug ins would support these teams according to their mission requirements. Clearly, further R&D is required to reduce significantly the time required to form highly competent, cohesive leader teams at all echelons, across BOS cultures.

Creating high-performing leader teams will be the next breakthrough in leader development. Such leader teams are particularly useful in asymmetric operations. For example, a critical counterterrorist offensive capability will be the ability to create

rapidly—in hours, not days or weeks—high-performing, multi-BOS, multicultural leader teams that lead both vertically and horizontally. Teams should be able to rapidly adjust their composition to stay ahead of local terrorist cells that will continually change their methods of operation to remain effective. The issue is providing highly proficient teams composed of individuals with the greatest conceivable power to influence the local counterterrorist situation. The major challenge is not to modify the performance of all-purpose groups to dominate a local situation. Rather, it is to bring together the precise expertise required to dominate the local situation, or niche, and to rapidly create a high-performance team built around those dominating capabilities. The ability to effect rapid cross-cultural leader bonding in ad hoc, hybrid military and civilian organizations would be a national asset comparable to stealth or network operations.

TRADOC's authority to assign responsibility and authority to organizations to balance development enables DTLOMS' horizontal coordination to take place across commands. This focus, when tied to the CTCs' mission to "test, fix, test" in the caldron of quasi-combat, serves both evolutionary and revolutionary spiral development. Together, TRADOC training centers and CTCs become the wellspring of tactical innovation.

Upon mobilization, or upon activating the hedge, land power must shift to a mass-production mode to amass the quantities of forces typically associated with conventional world war. There will likely be a substantial shift from quality to quantity—a more but "less better" situation. Therefore, there is a requirement to maintain a substantial military unit production base that can expand across combat, combat support, and CSS functions quickly.[12] This production base would be the Legacy Force.

I suggest several standing corps-sized forces, both mounted and light, that will maintain the wide range of task proficiencies and synchronization skills associated with a quantity force. More critically, they would provide a capability that could immediately address a 1+ major regional contingency above and beyond the international counterterrorist requirements for the Army. That force would not include substantial ARNG forces because they would be required to sustain homeland defense. Moreover, prudence dictates that the ARNG homeland defense capability should be available to state governors to augment and reinforce existing state security resources.

These several standing, largely AC, Army corps include leading edge, quality objective forces that provide BOS augmentation across the mission spectrum to the strike forces.[13] The corps maintain competencies associated with theater army combat support and CSS units. Conventional warfighting DTTP require these competencies to conduct mid-intensity operations. These competencies are the mark on the wall for RC forces not associated with homeland defense that become the hedge land power capability when they are mobilized. That is, the corps will maintain essential warfighting competencies that will be immediately available for missions, plus provide seed corn examples of proficiency required of hedge capabilities as they are constituted.

Consider the corps forces as legacy "lehr" units for maintaining Regular Army quality competence to infuse into newly created units during mobilization. This implies maintaining the RC even more than in the past as the expansion mobilization base—sufficiently credible to keep coalitions of land power opponents from forming. Sustaining highly capable counterterrorist forces plus highly credible hedges becomes a new aspect of military deterrence. These forces' actual competence and deterrent credibility would be sustained by a substantially larger TRADOC charged with maintaining cutting edge global dominance in each of the six DTLOMS imperatives.

Employing the Objective Force in Counterterrorism Operations

Continuing terrorism today is the most likely near-term threat to national security. SOCOM+ is maintained as the joint Objective Force, the leading edge of all six DTLOMS imperatives. Therefore, counterterrorism capability should follow the SOCOM quality precedent. When supported by each of the services—land, sea, and air—SOCOM becomes SOCOM+ and establishes the mark on the wall for future international counterterrorism operations. Following is a hypothetical situation in which, in the wake of the attacks on the World Trade Center and the Pentagon, the Army could employ its counterterrorism force.[14]

Counterterrorist forces (Delta Force) and direct-action forces (the Ranger regiment) supported by appropriate service units all form into highly proficient land, sea, air teams; deploy to a theater to kill terrorists; and destroy their enabling infrastructure. Ideally, SOCOM+ is augmented by indigenous host nation counterterrorist organizations. Simultaneously, joint SOCOM teams augmented by other

U.S. security and intelligence organizations bring together local leaders from various organizations—civilian, military, private volunteer organizations, nongovernment organizations, economic, and religious—into high-performing counterterrorist leader teams. These leaders have the competence and authority to modify policies and programs, as required, to gain and maintain the initiative against local terrorist cells.

SOCOM+ leaders are trained to develop and sustain local leader teams. Weapons would consist of nonlethal weapons, then lethal—all brilliant munitions—as required. Leader teams would be able to draw on, as needed, a precise combination of land, sea, and air capabilities—arrows in the quiver—to dominate particular terrorist situations. These teams would receive reinforcing national assets through the U.S. ambassador and the appropriate military command authority. Ideally, a substantial part of the combat force would come from allies. The objective is to achieve local diversity that reflects the local population so that local security organizations representative of local cultures—ethnic, religious, and so forth—are at the cutting edge. These could be augmented by Special Forces, Ranger, or Delta Force-type personnel.

SOCOM+ is elite in every respect. It consists of extraordinarily competent, high-performing teams with capabilities maintained across all BOS. This capability could be provided by the Objective Force strike forces. Sustaining extraordinary cross-BOS excellence is the services' Title 10 responsibility. For the Army, it is TRADOC's major responsibility to provide intensive leader development, unit training, proven DTTP, and proven organizational configurations appropriate for multinational, multiservice, multicivilian organizations like early strike force concepts.

This vision, enabled in time for Legacy Forces, will also rebuild the proactive professional ethos that has characterized the U.S. Army in the past. It is a vision of extraordinary professional excellence across the breadth of America's Army. Comparable leader teams would support homeland defense within the United States. Each state's ARNG would provide the military expertise under the governor's command. The Active Army and the U.S. Army Reserve would provide such support to the ARNG. New authorities, responsibilities, and associated resources will be required to support the ARNG in its enlarged role in America's Army.

These are challenging times. Fortunately, America's Army is ready. Institutionalizing processes of adjustment represented by TRADOC and SOCOM ensures timely, appropriate responses to evolving challenges to our great nation. The ARNG knows the path; it lacks only resources. With shared determination, Transformation under attack will be Transformation accelerated. The necessary tools and will are present. ***MR***

NOTES

1. Terrorism as manifested 11 September 2001 through subverting artifacts of advanced civilization (transport aircraft and skyscrapers) as well as using WMD.

2. General Gordon R. Sullivan, U.S. Army, Retired, and Lieutenant General Frederic J. Brown, U.S. Army, Retired, "America's Army," *Military Review* (March-April 2002), 3-8.

3. All an unfortunate aftermath of a superb post-Cold War drawdown former CSA Carl Vuono initiated, was executed through and beyond Operation Desert Storm, and then CSA Gordon R. Sullivan completed. Superbly executed with exceptional congressional support, years of reductions in force and shortfalls nonetheless generate their own atmosphere of decline.

4. No explicit tie is intended to the current Objective, Interim, and Legacy Forces that will and should all evolve. Whatever terms future leadership may wish to employ, the necessary forces are future (visionary), experimental, and present forces. All three must be addressed plus a credible hedge capability link to quantity forces generated after extensive mobilization.

5. The Reserve forces are being asked to do more and more but at what cost to the essential ethos of citizen-soldiers—vital members of America's Army? How much time can you devote to the U.S. Army Reserve or ARNG and continue to maintain a civilian job? Overemphasis on using Reserve forces, however capable they are, is an example of seed corn consumption with serious detrimental long-term implications.

6. Time periods a national authority establishes as the expected lead time to rebuild capability once a peer competitor emerges.

7. It should be noted that the ARNG leadership most appropriate for homeland defense is The Adjutants General political leadership the governor selects as a political act, not necessarily the line ARNG leaders selected based on their demonstrated competence in leading warfighting units. This is an excellent example of the diverse capabilities built into America's Army.

8. Special Forces' leader accession measures the Army Research Institute developed have proven to be exceptionally valid—a major human factors R&D success. A snapshot of the extraordinary cascading excellence of U.S. Army Special Operations Command and Joint Special Operations Command leaders was represented in the service of Sergeant First Class (SFC) Nathan Chapman who was killed in Afghanistan. Within hours, President George W. Bush and the national media lauded him and his young family. His parents, proud of his service amid their grief, were on video extolling him and military service in general. It would be hard to imagine either a more effective soldier (proud to be an American) or a more eloquent strategic media effort portraying the best of service to nation. If the B-52 JDAM guided by horse-mounted special operations soldiers was one breakthrough in combat from Afghan combat, the national pride evoked by SFC Chapman's selfless service that the media transmitted globally was another breakthrough. In life or death, superb American soldiers, as individuals, are national strategic assets as they portray America as it wishes to be to self and to the world.

9. No particular organizational design is suggested, although the case for accelerated Transformation within existing capabilities is compelling. See Douglas A. Macgregor, "Resurrecting Transformation: A New Structure for Post-Industrial Warfare," *Defense Horizons* (September 2001).

10. It seems likely that a hierarchy of capabilities from objective to interim to legacy will influence counterterrorist operations also. Highest priority U.S. states or multinational regions would receive priority for the best Federal objective capabilities. Each state ARNG could be expected to strive for the best—a healthy, beneficial competition.

11. Interim Forces design would be derivative of anticipated Objective Force capabilities for each BOS in a process of unending spiral development.

12. Base realignment and closure should accommodate quantity force-generation requirements. Closures are clearly necessary but not to the point of gutting hedge mobilization capabilities that are clearly integral to land power deterrence of likely peer competitors, like the training base.

13. The combination of Objective and Legacy Forces—conventional and counterterrorist—should be sufficient to satisfy land power requirements for at least two conventional major regional contingencies if those contingencies remain a relevant capability measure.

14. Joint and combined performance in Afghanistan has been remarkable. The rate of force development foreseen in Operations Just Cause and Desert Storm a decade ago has clearly accelerated. Actual performance is much closer to a hypothetical conceptual framework than I would have considered feasible before autumn 2001.

Lieutenant General Frederic J. Brown, U.S. Army, Retired, Ph.D., is the longest serving chief of armor and cavalry since World War II. He is coauthor of The Army in Transition *(1973) and author of* The Army in Transition II *(1993). His article "America's Army" appeared in the March-April 2002* Military Review.

Enabling Operational Maneuver From Strategic Distances

Brigadier General Huba Wass de Czege, U.S. Army, Retired, and Lieutenant Colonel Zbigniew M. Majchrzak, U.S. Army, Retired

He who occupies the field of battle first and awaits his enemy is at ease; he who comes late is weary.

—Sun Tzu, *Art of War*

ARMY AND JOINT Transformation are about more than penny packets of lethal, light, and highly mobile forces. While information can leverage and focus combat power, the laws of physics still apply to bringing sufficient force to bear a continent away during a serious crisis. Army and joint Transformation will also require transforming our system for strategic mobility.

During the past decade, the U.S. Army has been engaged in a deliberate but sweeping effort to adapt its organization, equipment, and methods of operation to meet the requirements of a rapidly changing strategic and technological landscape. The effort began almost immediately after the Persian Gulf war with the Army's "Louisiana Maneuvers" and continued throughout the 1990s in a series of advanced warfighting experiments and Army After Next studies and wargames. During the past 2 years, the Army has pursued its future vision through a broad series of Army Transformation studies and experiments, including major wargames such as the Vigilant Warrior series and field exercises at Fort Hood, Texas; Fort Lewis, Washington; and the National Training Center, Fort Irwin, California. These series of studies have confirmed the future importance of multidimensional operations and the need for U.S. forces to conduct operational maneuver from a strategic distance.

From the Army's perspective, multidimensionality will be essential if we wish to modulate the application of violence to accommodate shifting operational and strategic objectives. Nations confronted with a single kind of threat, whether blockade, bombardment, or outright invasion, find ways to defend against it that enable them to strike against their enemies, thus prolonging their own resistance, enlarging their enemies' costs, and sometimes, when the relative strengths are not wholly disproportionate, turning the very tide of war.

As military capabilities improve worldwide and as potential adversaries adapt their own patterns of operation to their perceptions of U.S. strengths and weaknesses, the premium associated with operations that attack an enemy simultaneously on multiple lines, against multiple points of vulnerability, and using multiple but complementary means will only increase. Such operations deprive an enemy of the freedom to concentrate his own efforts, overload his planning and coordination mechanisms, and compel him to expose his forces to new threats in an effort to protect them against others. As advanced military capabilities proliferate and as the physics of the battle area become more complex, the penalties associated with one-dimensional operations likely will increase. Even relatively primitive military forces have added new technological arrows to their quivers, as Russia's experience in Afghanistan and Chechnya and our own experiences in Somalia and Kosovo attest. In the latter conflict, a nation ranking 38th on the world's roster of military power endured nearly 3 months of relatively uncontested

It is clear that the United States no longer can afford to rely on forces designed to operate from an established theater infrastructure or that require the prior development of such an infrastructure as a precondition for launching operations. Instead, we must expect that future joint operations will be mounted and sustained directly from the United States, its territories, and its allies.

bombardment without significantly degrading its war-making potential.

Regardless of the nature and intensity of a future military contingency, it is clear that the United States no longer can afford to rely on forces designed to operate from an established theater infrastructure or that require the prior development of such an infrastructure as a precondition for launching operations. Instead, we must expect that future joint operations will be mounted and sustained directly from the United States, its territories, and its allies, creating minimal essential theater support facilities concurrent with and as an integral part of combat operations.

One consistent study finding in the Army's series of wargames has been that the crucial measure of successful force projection is not the speed with which the first combat element engages. Rather, it is the rate at which the United States and its allies achieve decisive operational superiority, depriving an enemy of freedom of action and making its ultimate defeat both inevitable and irreversible. Another has been that the increasing time compression affecting future force projection and the expanding radius within which future theater infrastructure will be vulnerable to attack and will present major challenges.

In short, the purpose of operational maneuver from strategic distance is to achieve a deployment momentum that not only permits rapid seizure of the initiative but also never relinquishes it. That objective obviously has implications for the way future Army forces must be organized, equipped, and trained. But it has equally important implications for the strategic mobility assets on which the Army and its sister services rely. The former has been addressed elsewhere; the focus of this article is on the latter.

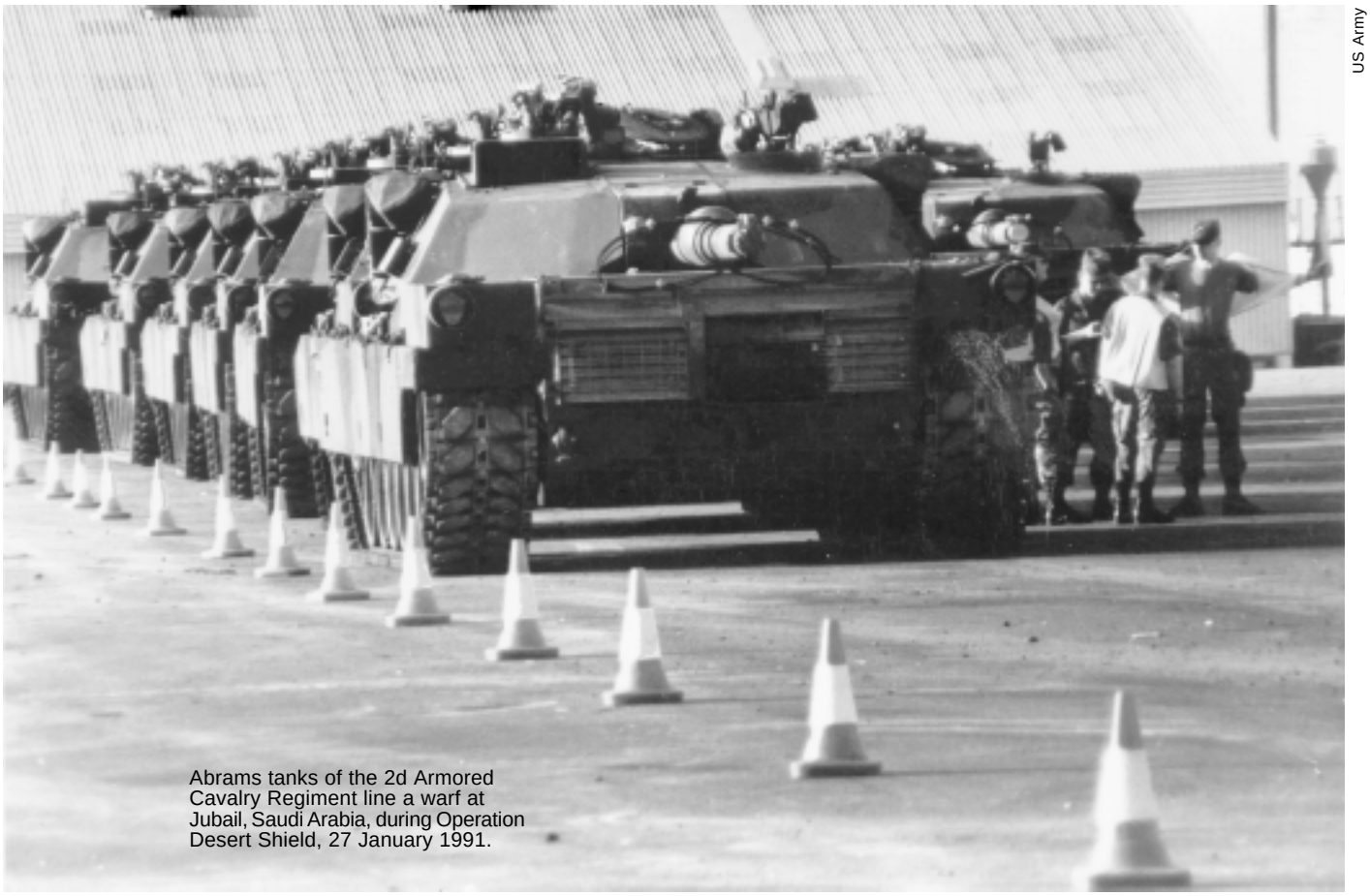
The recently concluded Army Transformation wargame, Vigilant Warriors 01, set in the future, explored the challenges of multidimensional operations and operational maneuver from strategic distances. It featured the Army's Objective Force, the other services' projected capabilities, and the capabilities of key allies and adversaries during the same time. It validated the premise that rapidly deployed Army Objective Forces—as part of a joint, multinational force—significantly impacted crisis resolution. It also proved that the immediate and sustained momentum of a land force expands its flexibility to exploit lethal fires, reduces risks, and constrains enemy options. Finally, it concurrently offered a venue to explore the force-projection concepts and technologies necessary to produce a strategically responsive joint force capable of immediate decisive operations.

In its examination of the challenges of operational maneuver from strategic distances, Vigilant Warriors 01 focused on deployment capabilities that can provide assured access, decrease predictability and dwell time, and quickly deliver troops and equipment together in sufficient size to generate immediate combat power. Today's inventory of lift assets cannot provide these capabilities, even when Army Transformation is completed.

The crucial measure of successful force projection is not the speed with which the first combat element engages. Rather, it is the rate at which the United States and its allies achieve decisive operational superiority, depriving an enemy of freedom of action and making its ultimate defeat both inevitable and irreversible.

Military and commercial airlift provide the necessary speed, but it is a piecemeal delivery system with a small capacity. Sealift has the necessary capacity, but it is slow and requires days to load and unload. Moreover, both sea and air assets are port and airfield dependent, affected by throughput limitations, and susceptible to a foe's antiaccess strategy because of their reliance on predictable entry points. The U.S. and allied forces in Vigilant Warriors 01 employed a mixture of current lift assets and promising future concepts.

Of all air and sea, current and future, lift capabilities, shallow draft high-speed ships (SDHSS)—because of their speed, throughput capability, and capacity—most significantly impacted force closure. Air deployment remains the only way to rapidly establish the initial crisis-response presence of air expeditionary forces and a division equivalent of ground forces needed to preclude enemy forces' early success. But after a few days, SDHSS had a distinct advantage. It was the only strategic platform that could deliver troops and equipment together in sufficient size to bring immediate combat power to bear. While in transit, commanders could conduct en route planning and receive intelligence updates. Moreover, the SDHSS did not require a fixed port because it could discharge its combat power wherever there was at least a 10-foot draft and an acceptable beach gradient or discharge site. Troops drove the future combat system (FCS) from the ship



US Army

Abrams tanks of the 2d Armored Cavalry Regiment line a warf at Jubail, Saudi Arabia, during Operation Desert Shield, 27 January 1991.

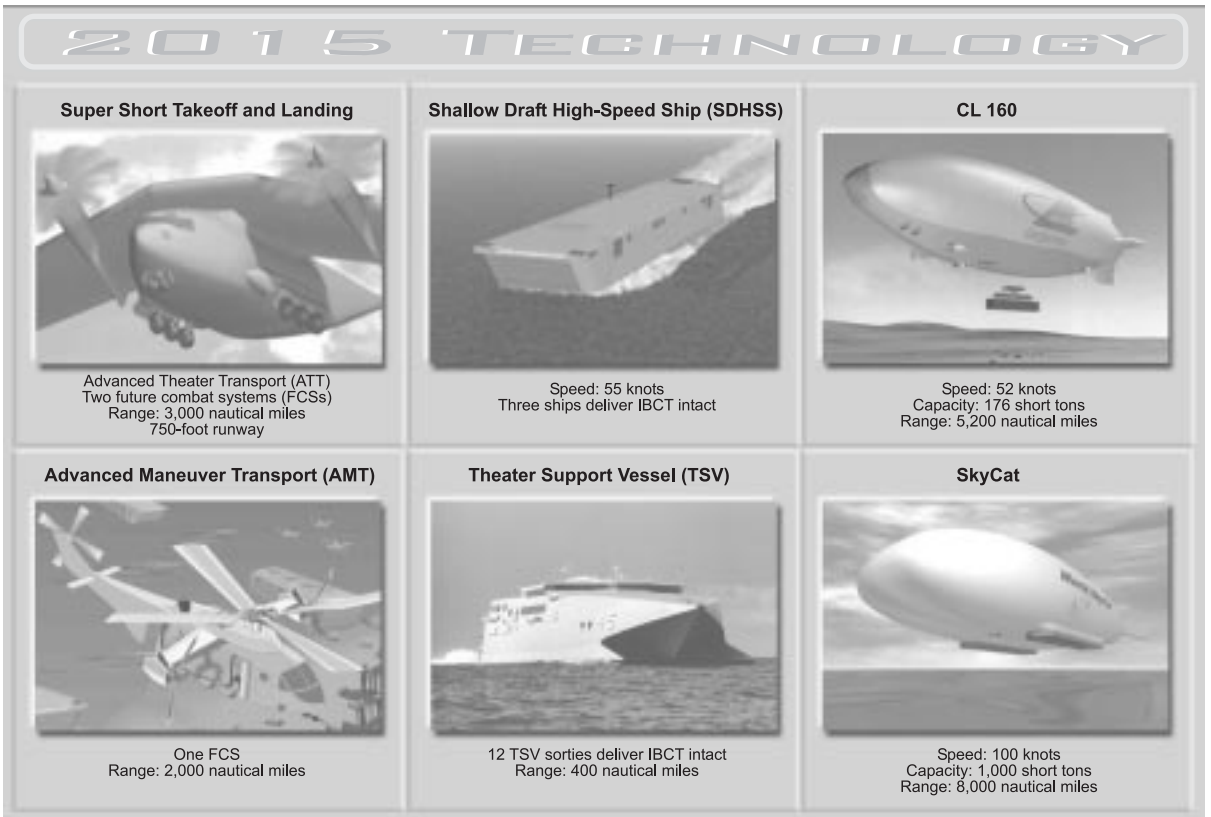
Vigilant Warriors 01 clearly demonstrated that future lift concepts are necessary to enable the operational maneuver of a multidimensional force over strategic distances. . . . Operational maneuver has historically begun from a base of strategic infrastructures. In the Cold War days, forward presence forces established that base in Europe. During fall and winter 1990, that base was established on the Arabian Peninsula. Our adversaries will never again permit such a buildup.

ready to fight onward to the tactical assembly area.

The ability to bypass a fixed port was a critical capability during the wargame. Red forces targeted and attacked the conventional entry points into the theater, rendering significant damage and limiting the major ports' availability. The Blue joint force commander (JFC), however, anticipated Red's antiaccess campaign and attained a degree of surprise by taking advantage of the flexibility the SDHSS offered to discharge combat power at multiple entry points along the coast in an unpredictable pattern. Specifically, SDHSS delivered two Objective Force brigades within 3 days. In addition, an armored cavalry regiment, which had been placed on SDHSS just before commencement of deployment day (C-day) as a flexible deterrent option, landed on C+2 and provided immediate combat power to the JFC.

The intratheater version of the strategic SDHSS, the theater support vessel (TSV)—the Army's future watercraft—also proved valuable. To conserve military air and to rapidly deliver Army air and missile defense capability into the theater, the TSV was initially used in a strategic role. Thereafter, it was another source of agility and flexibility as it allowed the JFC to insert combat power and sustainment with precision in a quickly changing environment. Not limited to ports, the TSV could operate at countless locations along the coast without losing efficiency.

The value of the SDHSS and TSV was further demonstrated in several postwargame excursions when the joint time-phased force deployment data was executed on the Joint Flow Analysis System for



Transportation model without the SDHSS and the TSV included. Force closure of initial combat units was delayed in some cases for as much as 2 weeks. This lateness would have been compounded by the enemy's antiaccess efforts. More important, the Objective Force's late arrival would have allowed Red to set and consolidate its gains, thereby making entry more difficult and costly. In effect, the campaign would have required a much larger force, casualties would have risen significantly, and the length of the campaign could have doubled.

Future air concepts also played a critical part in the campaign's success. Three new types of airlift were employed: the advanced maneuver transport (AMT), the advanced theater transport (ATT), and two types of ultralarge airships (ULAs). The AMTs and ATTs were intratheater transports, while one type of ULA played a strategic role and the other an intratheater role (both ULAs were Civil Reserve Air Fleet assets).

The AMT and ATT gave the JFC the flexibility and agility to place combat units and sustainment at optimal points and time. The ATT's ability to take off and land on a 750-foot runway made it possible to operate in all the identified airfields in the area of operations. Moreover, it landed on 750 feet of road or field, which added innumerable points of entry, attack, and sustainment. It was this feature of the aircraft that enabled the JFC to deploy an Objective Force brigade from Germany into the area of operations between C+2 and C+5.

The U.S. and allied forces in Vigilant Warriors 01 employed a mixture of current lift assets and promising future concepts. . . . Red forces targeted and attacked the conventional entry points into the theater, rendering significant damage and limiting the major ports' availability. The Blue JFC, however, anticipated Red's antiaccess campaign and attained a degree of surprise by taking advantage of the flexibility the SDHSS offered to discharge combat power at multiple entry points along the coast in an unpredictable pattern.

The AMT, with its ability to insert combat vehicles vertically, gave the commander unparalleled speed and agility on the battlefield. Generally independent of ground conditions, it enabled the JFC to conduct vertical envelopment and vertical maneuver. This capability avoided predictable, linear patterns of operations and sped up the enemy's collapse by forcing him to defend in more than one

direction. The aircraft also played a key sustainment role in resupplying the highly mobile Objective Force. Without this capability, linear operations and long ground lines of support would have been unavoidable.

While the AMT and the ATT were operationally valuable, their deployment posed several challenges. In the game, most of the AMTs and all the ATTs self-deployed from the continental United States (CONUS) at the same time that large numbers of cargo aircraft were also moving. This added a considerable burden on the already large en route infrastructure requirement at a critical time. The availability of aircraft parking space and fuel, ongoing commercial activity, base security, and overflight rights must be addressed. While not insurmountable obstacles, they complicate operations at this stage of the campaign.

The AMT, with its ability to insert combat vehicles vertically, gave the commander unparalleled speed and agility on the battlefield. Generally independent of ground conditions, it enabled the JFC to conduct vertical envelopment and vertical maneuver. . . . Without this capability, linear operations and long ground lines of support would have been unavoidable.

The strategic ULA immediately impacted the wargame with its ability to deliver a 750-short ton sustainment load, given the Objective Force's hand-to-mouth logistics capability. The requirement for at least a 3,000-foot open landing space, appropriate materials handling equipment, its size, and the fact that it is a civilian platform limited the ULA to certain locations. Floor restrictions on the aircraft limited cargo to lighter items such as helicopters, light vehicles, and sustainment stocks. It was, nonetheless, a valuable asset because of the amount of cargo it could deliver.

The smaller, intratheater ULA could vertically deliver its cargo by hovering at approximately 100 meters and lowering its payload. The cost associated with the vertical discharge, however, was the requirement for a load exchange for ballast. In the wargame, ballast water was used, and this limited using CargoLifter's CL 160 to routes along the coast.

Operational maneuver from a strategic distance is a new paradigm for multidimensional joint operations. Operational maneuver has historically begun from a base of strategic infrastructures. In the Cold War days, forward presence forces established that base in Europe. During fall and winter 1990, that base was established on the Arabian Peninsula. Our adversaries will never again permit such a buildup.

Vigilant Warriors 01 clearly demonstrated that future lift concepts are necessary to enable the operational maneuver of a multidimensional force over strategic distances. These concepts should not be thought of as replacement platforms for what the military has. Appropriate combinations of these could make joint transformation possible. Simply put, there is a limit to what can be done by reducing the demand for lift—by condensing the size and weight of the services' equipment. At some point, there has to be a significant increase in the supply of strategic lift, and that strategic lift must have certain qualities.

Strategic lift must enable operational momentum; that means speed and volume from an early stage. It has to avoid predictability and vulnerable chokepoints, and it must bypass intermediate staging facilities between the CONUS strategic base and the operational area. More important, the concepts for employing these systems must be deeply integrated into the concepts derived for campaigning. Operational maneuver will begin at home stations around the world. Maneuver will be across strategic distances to position forces and supporting infrastructure where and when they need to go into action. This will require a new strategic and operational mobility system. ***MR***

Brigadier General Huba Wass de Czege, U.S. Army, Retired, is a consultant for the U.S. Army Training and Doctrine Command's advance warfighting experiments. He was one of the principal developers of the Army's AirLand Battle concept and the founder and first director of the School of Advanced Military Studies, Fort Leavenworth, Kansas.

Lieutenant Colonel Zbigniew M. Majchrzak, U.S. Army, Retired, is the chief of Doctrine and Futures, Deployment Process Modernization Office, Fort Eustis, Virginia. Since the Army Transformation Study, Wargaming and Analysis Project's (formerly the Army After Next project) inception in 1996, he has served as a key force-projection and deployment expert and on multiple committees for the Army Science Board.

Transforming Army Learning Through Communities of Practice

Major Peter Kilner, U.S. Army

THE ARMY TRAINING and Leader Development Panel's (ATLDP's) Officer Study Report identified numerous challenges that the Army is addressing as it transforms to the Objective Force. The report called on the Army to "establish new systems, models, and procedures from the best of existing programs to develop leaders for full spectrum operations."[1]

As one of its responses, the Army is developing a digital Warrior Knowledge Network (WKN) to support leader development. The WKN will be a web-based knowledge system that provides Army leaders and soldiers with tailored, timely, and relevant knowledge and information. The dominant structure of the WKN will be online communities of practice (COPs) that provide a powerful new model for knowledge sharing and learning.

This article defines COPs and overviews their enormous potential for the Army, especially in the areas of leader development, doctrine, and culture.[2] It is not an overstatement to say that COPs have the potential to transform the way the Army does business, helping it to become a knowledge-based learning organization that is even more able to educate and train its leaders, develop its doctrine, and inspire commitment from its people.[3]

Theory and Practice

Although COPs have always existed, the Internet has enabled them to become exponentially more powerful. COPs are voluntary associations of people bound together by a shared passion for a particular practice.[4] They are self-selected groups whose members come together to help each other by sharing professional knowledge, stories, ideas, and tools. Such communities seem to form naturally. For example, in antiquity, artisans formed corporations, and in the Middle Ages, tradesmen formed guilds.[5] In the U.S. Army, recurring officers' calls and lunchtime discussions often foster small COPs. COPs are not defined by how their members communicate, which may be through journals, conferences, informal meetings, list serves, bulletin boards, and any other forms of communication. Rather, COPs are defined by conversations, relationships, and a spirit of collaboration that develop via various means of communication.

Online COPs are transforming. They reduce the stovepipes that inhibit communication among leaders, among organizations, and among leaders and their organizations by enabling and promoting knowledge sharing and integrative learning.

The CompanyCommand.com website has become a functional COP for military company-level commanders.[6] Visitors to the site are drawn by their shared passion for command. On the site, former and experienced company commanders share their command-related stories, ideas, and tools with current and future commanders. Commanders who have a question or problem can post it, inviting other members of the community—many of whom have helpful knowledge on the topic—to offer advice. Like an officers' call at the club, the website is a forum for leaders to informally share knowledge.[7] Participants tell stories, offer and debate ideas, and look for guidance. There is no gatekeeper of knowledge. In this marketplace of ideas, everyone is free to speak, yet all are expected to use their own judgment to assess the quality of what they hear.

In some respects, online conversations can elicit more candor than face-to-face communications do. Speaking without attribution, participants are more likely to offer unconventional ideas and say what they really think at the moment. "I can ask

questions in this forum that are somewhat taboo within my own organization . . . [and] can get real-world answers from experienced officers who are not in my rating chain," one captain wrote to CompanyCommand.com. Participants find themselves assessing their hidden assumptions and ways of thinking when they air their ideas and receive feedback that challenges their thinking. Anonymity forces participants to focus on the quality of the ideas presented rather than on distractions such as their contributor's rank, position, or appearance.

Online COPs also have great potential for helping Army leaders develop and maintain up-to-date doctrine. . . . Army doctrine writers could leverage COPs to decrease the time it takes to develop and field new doctrine. COPs make possible an integrative model of knowledge management that would speed the flow of knowledge between leaders in the field and doctrine developers in the schoolhouses.

Another important and unique advantage of online discussions is that they are not constrained by time and space. Participants can engage in asynchronous discussions with fellow practitioners around the world, 24 hours a day, 7 days a week. Informal conversations among professionals that in earlier times occurred regularly on Friday evenings at officers' clubs are now possible anytime, anywhere. Leaders with Internet access and a passion for self-development can join a conversation wherever they are, whenever they want, which is helpful for a globally deployed Army.

Making Knowledge Useful

COPs can and should play a huge role in Army leaders' professional development for several reasons. They save leaders from having to reinvent the wheel, they impart tacit knowledge to leaders through vicarious experiences, and they do not merely share and transfer knowledge; they actually help to create new knowledge. Finally, COPs facilitate the just-in-time learning that leaders require in the contemporary operating environment.

Army leaders have a bad habit of reinventing the wheel. Even though leaders rotate through many of the same jobs, the Army has no systematic way of capturing and building on its many lessons learned. Leaders consider themselves lucky if their predecessors left a continuity file and are largely on their own to develop from scratch their own systems and products. This enormous disuse of institutional knowledge wastes time and money, and it frustrates leaders who value efficiency.

COPs enable practitioners to harness and build upon the knowledge each generation of leader gains. In a sense, COPs are Armywide continuity files that are living, current, and easily transferable. For example, members of the company commander community post products and tools on CompanyCommand.com, such as policy letters, operation order (OPORD) formats, and training management matrixes, so that incoming commanders can use them as time-saving templates. Captains at the armor and infantry captains' career courses exploit this resource. Students download the site's selection of OPORD formats and then experiment with them during orders process exercises. By the time they graduate and move to their command assignments, those captains have usually developed an OPORD format with which they are comfortable and rehearsed. By providing baseline products and tools for new commanders, the company commander COP frees those commanders to focus on leading their soldiers.

COPs also enable leaders to benefit from the experiences of their entire community. While it is great to learn from one's own mistakes, it is even better—for the sake of unit effectiveness and one's subordinates—to learn from someone else's mistakes. The stories and lessons learned that are shared within COPs do just that. Such stories enable leaders to learn vicariously about situations they have not yet encountered in their own operational experiences.

COPs do not merely share and transfer knowledge; they actually help to create new knowledge that contributes to leaders' professional development. COPs facilitate conversations among practitioners about their practices. Conversations among knowledgeable, engaged people tend to produce ideas. Very often, this interplay of ideas generates an entirely new idea, one that would not have occurred otherwise. This is how COPs generate new knowledge. With an online COP, that knowledge is captured in writing and is immediately and permanently available to the entire community.[8]

Just-in-Time Learning

The knowledge that COPs develop can help Army leaders adapt quickly to achieve competency across the full spectrum of operations. In today's environment, it is nearly impossible for the formal Officer Education System (OES) to prepare lead-

US Army

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ers for every possible situation they will encounter in performing their duties. Army leaders simply have too many requirements. Twenty years ago, Army leaders were competent if they could fight the Army's role in mid- and high-intensity battles on linear battlefields. Today, Army leaders must be able to operate across the full spectrum of operations, from stability and support operations to high-intensity conflict in joint and combined organizations on contiguous and noncontiguous battlefields.[9] They must also be able to employ both Legacy and Interim Force organizations using Active and Reserve component forces. Clearly, leaders' tasks have multiplied, yet the time available for them to learn those tasks has not.

COPs represent a model for professional self-development that can fill the gap between leaders' knowledge requirements and the institutional Army's resources. The current OES was designed during and for the Cold War, but times have changed faster than the Army educational model has.[10] The OES still primarily provides "just-in-case" learning, offering all officers essentially the same generic education just in case they may one day need the information. As officers' knowledge requirements have increased, however, the just-in-case system has not been able to keep pace. Officers' educational needs are too diverse. Consequently, the OES coursework has become increasingly irrelevant to officers' needs.[11] What officers want and need is a resource that enables them to succeed in the particular circumstances of their actual duty assignments.

Instead of relying solely on generic just-in-case education, the Army could also use the knowledge that COPs create and capture to provide tailored just-in-time learning. As these communities develop and mature, they will become repositories of knowledge on particular practices. As such, leaders en route to those practices can use the communities' resources to quickly learn about them. Consider, for example, a battalion motor officers' (BMOs') online COP. Over time, that community would assemble lessons learned, report formats, and other helpful tricks of the BMO trade. The community members could even rate the submissions so new BMOs could quickly identify the expert community's collective judgment of the most valuable

resources and ideas. The newcomer could also read through the COP archives to gain a sense of the issues he will face and learn from others' experiences. Moreover, the BMO could introduce himself to the community and begin to develop relationships. Just in time, the BMO would be prepared to assume his new duties.

This model of just-in-time learning would complement the learning that occurs in the Army's schoolhouses. Leaders will always need what the schoolhouses excel at providing—a foundation of professional knowledge, personal relationships, and Army acculturation. Moreover, the schoolhouses would remain the brain trusts of expertise. In the BMO COP example, then, the faculties of the Army's maintenance courses would moderate the online community, sharing their knowledge and resources with BMOs in the field. In this way, the COP model bridges the gap between the schoolhouse and the field. Retired Brigadier General David L. Grange spoke to West Point cadets and highlighted that a key component of the Army's professional learning model is self-development. He stated: "You have to keep one foot in the street and one foot in the library in order to keep learning while you go through the experience." COPs enable leaders to have the best of both worlds by bringing the schoolhouses' subject matter experts into the same conversation space as leaders in the field.

COPs would address Army leaders' desire for increased mentoring. The ATLDP reported that "officers would like to see an increased emphasis on mentoring but do not want formal, directed programs." COPs seem custom-made to meet that need.

This model is also very agile. When a new policy or procedure is established, the entire community of practitioners could quickly hear about it, discuss its implementation, and provide feedback to the command.[12]

Distance Learning Gives Adult Learners What They Want

To maximize leaders' experiential learning and to reduce turbulence and expenses, the Army plans to rely increasingly on distance learning. The Army recognizes that its "distance learning courseware must address the diverse needs of adult learners [which] include: a need to know why learning is required, a need to direct their learning, a need to contribute their experiences to the learning situation, a need to apply what they have learned to solve real world problems, and a need to feel competent and experience success throughout the learning program."[13]

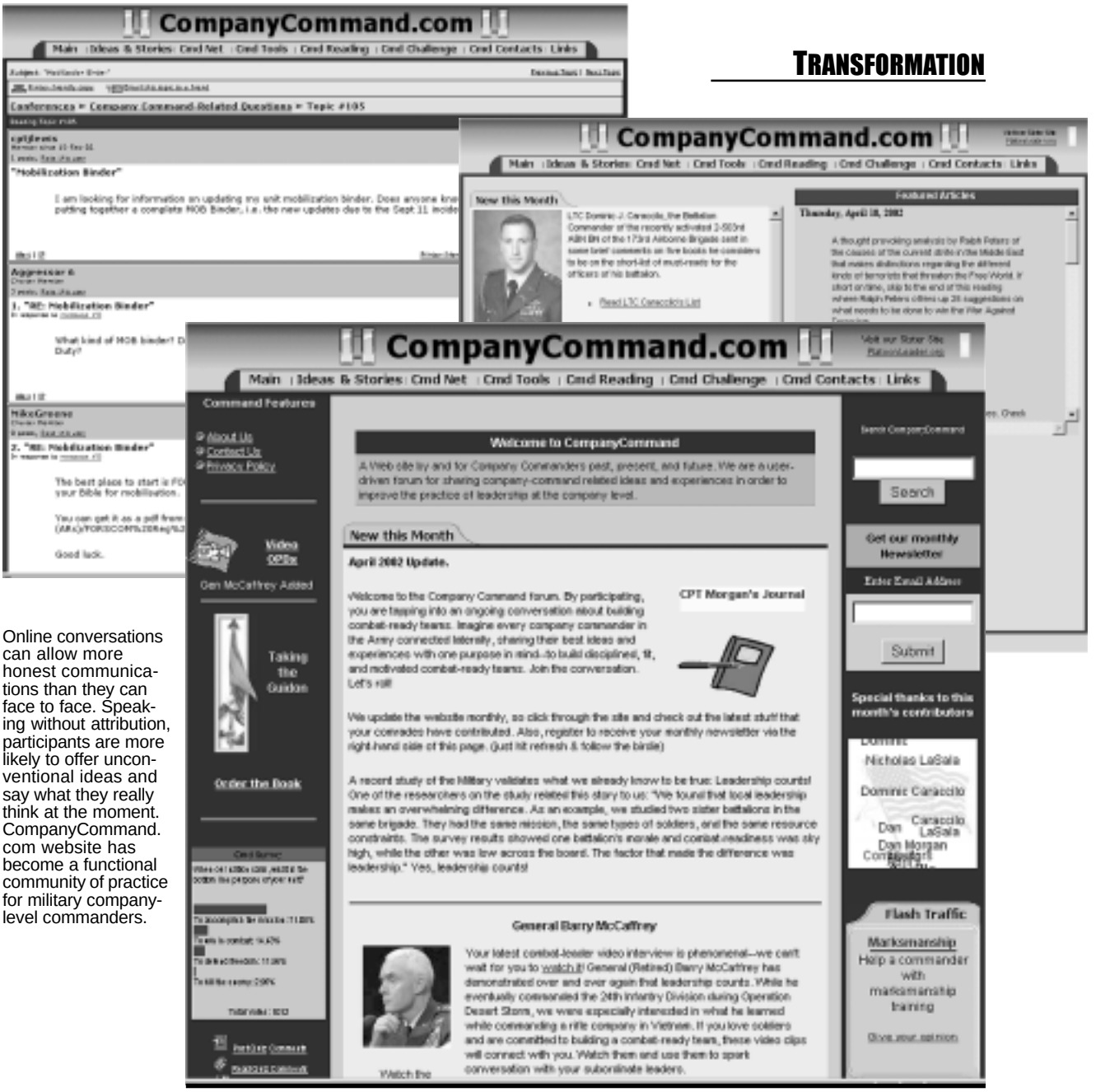
COPs are effective means for distance learning because, by their very nature, they address adult learners' needs. COP participants are there precisely because they want to learn. COPs also enable their members to direct their own learning, and COPs rely on their members' willingness to contribute their experiences so that all members of the community are better able to perform their real-world duties. COPs provide the kind of learning that the Army recognizes is essential to effective distance education.

COPs employ a model of education that is radically different than the Army's current distance learning model. The Army Distance Learning Program (TADLP) is designed around information transfer, from the schoolhouse to the soldier. The institution teaches, and the student is expected to learn. The TADLP's challenge is expressed by the adage, "You can lead a horse to water, but you can't make it drink." COPs, on the other hand, are designed to support knowledge sharing, primarily among peers. The community shares knowledge—information in meaningful context—and the community learns. With COPs, the proverbial horse has gone to the water on its own because it wants to drink with other horses that share its thirst.

How Army distance learning can use COPs remains to be seen. Renowned education researcher Andrew Lippman contends that "learning takes root when you do it yourself and when there is an emotional reason to be attached to the knowledge," conditions that characterize COPs.[14] It makes sense, then, that the Army Distance Learning Program should leverage COPs to facilitate and guide learning.

Integrating Doctrine Development

Online COPs also have great potential for helping Army leaders develop and maintain up-to-date doctrine. The ATLDP determined that over the past decade, "The Operating Environment has changed faster than the Army has adapted its training and leader development programs."[15] Army Transformation—a necessary and wholly appropriate movement—is creating new challenges for doctrine writers as "the force is evolving faster than the institutional training base can provide up-to-date training and educational products."[16] Consequently, units



Online conversations can allow more honest communications than they can face to face. Speaking without attribution, participants are more likely to offer unconventional ideas and say what they really think at the moment. CompanyCommand.com website has become a functional community of practice for military company-level commanders.

In a sense, COPs are Armywide continuity files that are living, current, and easily transferable. For example, members of the company commander community post products and tools on CompanyCommand.com, such as policy letters, OPORD formats, and training management matrixes, so that incoming commanders can use them as time-saving templates. . . . [Said one captain] "I can ask questions in this forum that are somewhat taboo within my own organization . . . [and] can get real-world answers from experienced officers who are not in my rating chain."

face missions for which there is no doctrine, hampering both their operational performance and their leaders' development.[17]

Army doctrine writers could leverage COPs to decrease the time it takes to develop and field new doctrine. COPs make possible an integrative model of knowledge management that would speed the flow of knowledge between leaders in the field and doctrine developers in the schoolhouses.

An integrative approach to knowledge operates in the middle ground between a completely hierarchical approach and a completely emergent approach. Conceptually, all organizations tend to adopt one of these two perspectives toward knowledge management. Knowledge is treated hierarchically if the organization assumes that knowledge of best

practices resides with the organization's leaders at the top. Those leaders then pass the knowledge down to the organization's subordinate workers. This is how the Army currently treats knowledge—hierarchically. An emergent model of knowledge, on the other hand, assumes that the actual practitioners of the organization—in this case, soldiers in the field—know what the best practices are. In such an organization, senior leaders' primary role would be to support those who work at the touch-points of the enterprise. Many businesses adopt this model to keep pace with their fast-moving environment.

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Each model, taken alone, has its limitations. A hierarchical model is less able to use knowledge to keep pace with a fluid environment. Too often, its knowledge is stale and does not reflect the best practices available. For example, after the first U.S. Army rotational units returned from Somalia, it was nearly 18 months before the White Paper on peace enforcement operations was published. The Army took too long to harness and usefully share its knowledge. A purely emergent model, likewise, has its limitations. Its decentralized processes make it more difficult for an organization to pursue strategic goals, to forecast resources, and to maintain a shared set of values.

The Army could benefit greatly from processes that use an integrative model of knowledge, one that operates on the middle ground between a completely hierarchical perspective and a completely emergent perspective. For example, COPs could foster online discussions that bring together doctrine developers in the U.S. Army Training and Doctrine Command (TRADOC) and doctrine practitioners in the field. Those writing doctrine could then learn in real time as the field is learning, and at the same time, they could moderate the conversation to ensure it stays on course with strategic initiatives and values.

Such an integrative approach to learning would create communities of stakeholders who collaborate to their mutual benefit. Consider this scenario of how online COPs would contribute to more timely, relevant, and practiced doctrine. Periodically, TRADOC would assess the relevancy of its doctrine by monitoring and reviewing COPs' discussions. If it found that the practitioners' discussions of tactics, techniques, and procedures were consistent with doctrine, there would be no need for TRADOC to expend resources to revise the doctrine. If, however, TRADOC were to find that professional discussions in COPs indicated that doctrine needed to be revised, TRADOC could review COPs and search their common database to gather and analyze input from the field. This input would include the expertise of observer/controllers at the combat training centers and the Battle Command Training Program, schoolhouse instructors, and leaders in field units, all of whom would be active participants in their relevant communities. Then, once TRADOC's writers drafted proposed revisions, they could post the drafts on the relevant COP forums and solicit immediate feedback through online conversations. In this way, the schoolhouse and the field would share ownership of the doctrine. Doctrine developed through this integrative approach would be written more quickly, be understood more widely, and be practiced more faithfully than is currently the case.[18]

Fostering Excellence Through Professional Relationships

The rise of online COPs would also transform Army culture in a positive way, as they are already doing at the grass-roots level. Army leaders want to work efficiently, be competent at every duty position, keep improving their units, and be inspired and supported by a community that shares their dedication to soldiers and mission accomplishment. Robust COPs that harness and exploit the power of professional relationships can assist these leaders. To the extent that these dedicated leaders have the means to accomplish their dreams, the gap between Army beliefs and practices, a gap cited by the ATLDP, will narrow.[19]

COPs would address Army leaders' desire for increased mentoring. The ATLDP reported that "officers would like to see an increased emphasis on mentoring but do not want formal, directed programs."[20] COPs seem custom-made to meet that need. Consider one junior officer's feedback to CompanyCommand.com: "The sharing of personal knowledge from one's peers is something the Army has been unable to duplicate in its 'mentorship' program. The quality advice, guidance, and sense of belonging to a community or family of professionals has been sorely lacking from my Army life, and I for one am glad to see that personal initiative has been taken to remedy this."

COPs can also positively impact retention by exposing leaders to professional peers who share their commitment. Junior leaders' operational experi-

ences may be very narrow, limited perhaps to their first assignment's company or battalion. They may generalize their unit's culture to that of the entire Army, which is a problem if their unit's leadership is substandard. Online COPs, however, can bring together leaders from units around the world, providing a broader perspective of the Army profession.

Consider how a COP helped one lieutenant: "CompanyCommmand.com has helped me to make a major decision in my life. My last assignment as a LT [lieutenant] was Fort Carson, where I became convinced that the officers were more concerned with their OERs [Officer Efficiency Reports] and with outdoing each other than they were with caring for soldiers and preparing for combat. I put maximum effort into being a PL [platoon leader], but I was still convinced that the best place for me was the civilian world. As time for promotion to captain and career course drew near, I began visiting CompanyCommand.com and I realized that there are A LOT of officers in the Army who really do care about combat readiness. I found that there really are capable leaders who are leading our soldiers and doing great things. I completed the FA [field artillery] Captains Career Course in July, and I have recently reported to the 1st ID in Germany. Thanks for helping me to see the truth."

The Way Ahead

In one sense, COPs are nothing new. They are groups of dedicated professionals who come together to learn, share, and support one another as they pursue excellence in their chosen practice. In another sense, however, online COPs are transforming. They reduce the stovepipes that inhibit communication among leaders, among organizations, and among leaders and their organizations by enabling and promoting knowledge sharing and integrative learning.

Robust online COPs can help the Army transform, but only an already transforming Army will be able to implement them properly. COPs are powerful because they are of the soldiers, by the soldiers, for the soldiers. They cannot be mandated; each community must be built by the community itself. The "If we build it, they will come" mantra does not apply to COPs. Instead, the Army must recognize that "If they build it, they will come, and we will support them" is the attitude that will lead to organizational success.

If the Army can trust its leaders at all levels by supporting their efforts to become connected through online COPs without micromanaging those efforts, the result will be an Army that is more competent, agile, and adaptive. If senior leaders are willing to lose control tactically, they will gain more control strategically. They will have fostered a knowledge-based, network-centric Army that is able to maintain knowledge dominance in the contemporary operating environment.

One of the WKN's roles will be to support and enhance Army COPs by acting as the COP for the COPs. Its potential to assist and accelerate Army Transformation is enormous because it capitalizes on soldiers' untapped stores of energy and knowledge. Implemented properly, the WKN and its COPs will become powerful tools in developing adaptive leaders, relevant doctrine, and soldiers who are doctrinally smart and committed to the Army service ethic. ***MR***

NOTES

1. The Army Training and Leader Development Panel (ATLDP) Officer Report to the Army at <http://www.army.mil/features/ATLD/report.pdf>, paragraph OS-14.
2. The ideas expressed in this essay emerged from the author's conversations with the CompanyCommand.com team, especially Majors Nate Allen, Tony Burgess, and Steve Schweitzer.
3. These are three of the seven leader development imperatives the Army has identified as being key to its success in achieving Transformation.
4. For an excellent discussion of COPs, see Etienne C. Wenger, Richard McDermott, and William M. Snyder, *Cultivating Communities of Practice*: *A Guide to Managing Knowledge* (Cambridge, MA: Harvard Business School Press, 2002).
5. Etienne C. Wenger and William M. Snyder, "Communities of Practice: The Organizational Frontier," *Harvard Business Review* (January-February 2000), 140.
6. To see how the CompanyCommand.com COP is meeting junior officers' needs, read the website's feedback from the field at <http://www.companycommand.com/comments/jan2002.htm>.
7. In March 2002, the CompanyCommand.com website served more than 28,000 visitors who viewed more than 320,000 pages, logged more than 1.5 million hits, and downloaded 12.6 gigabytes of data.
8. The WKN will use a single database with multiple entry points and an object-based architecture. Consequently, information captured on any COP will be permanently available to all COPs.
9. ATLDP, paragraph OS-17.
10. ATLDP, paragraphs OS-17 and OS-79.
11. ATLDP, paragraph OS-39.
12. ATLDP, paragraph OS-13. The ATLDP recommends that the Army "develop a web-based feedback system from Army OES schools to units to maintain relevancy with the field." While existing Army feedback systems tend to be linear—allowing only one-to-one communication between the field and the schoolhouse—COPs can provide networked feedback discussions that involve the entire community and are much more effective.
13. Millie Abell, "Soldiers as Distance Learners: What Army Trainers Need to Know" (Fort Monroe, VA: U.S. Army Training and Doctrine Command), available at <http://www.tadlp.monroe.army.mil/abell%20paper.htm>.
14. Andrew Lippman, "Lippman on Learning: Fundamental Changes," *Syllabus* (February 2002), 12-13. Lippman is the founding associate director of the Massachusetts Institute of Technology's Media Laboratory.
15. ATLDP, paragraph OS-14.
16. ATLDP, paragraph OS-69.
17. ATLDP, paragraph OS-14.
18. The online discussions of the doctrine's development could even be archived so that future users could understand how and why it developed as it did.
19. ATLDP, paragraph OS-19.
20. ATLDP, paragraph OS-29.

Major Peter G. Kilner, U.S. Army, is a student at the U.S. Army Command and General Staff College, Fort Leavenworth, Kansas, and senior editor of CompanyCommand.com. He received a B.S. from the U.S. Military Academy (USMA) and an M.A. from Virginia Polytechnic Institute. He has served in various command and staff positions, including assistant professor, Department of English, USMA, West Point, New York; commander, D Company, 2d Battalion, 325th Airborne Infantry Regiment, Fort Bragg, North Carolina; and scout platoon leader, 4th Battalion, 8th Infantry Regiment, 1st Armored Division, Sandhofen, Germany. His article "Military Leaders' Obligation to Justify Killing in War" appeared in the March-April 2002 Military Review.

Equipping the Objective Force

Brian J. Dunn

THE U.S. MILITARY, especially the Army, faces a dramatically different and uncertain strategic environment yet fields systems built for the last era. The Army's Cold War role was narrowly defined, requiring forward-deployed heavy armor to blunt massed armored assaults. Lightness meant death, and the Abrams main battle tanks (MBTs) and Bradley fighting vehicles used so successfully in the Gulf are the apogee of design built to win in that environment. The Army's familiar task of defending Western Europe and the Republic of Korea has given way to a global mission in which the Army must defeat a range of unspecified threats. The Army must deploy from the continental United States (CONUS), and the heavy systems built for the last era are ill-suited for this new role despite proven lethality and projected upgrades. Problems deploying units to Albania during Operation Allied Force in 1999 and the prospect of intervening in locations such as Rwanda have shown that for these types of missions, the heavy armor used in the Persian Gulf war so decisively is too heavy.

The ability to prevail in a Desert Storm-type campaign is still necessary, however, and reconciling these varied missions is the goal of the Objective Force. The new interim brigade combat teams (IBCTs) will test concepts of deploying as a light force yet prevailing as a heavy force on the road to the Army's Objective Force that will exploit the revolution in military affairs (RMA).[1] Major General R. Steven Whitcomb, U.S. Army Chief of Armor, plans to equip the Objective Force with a future combat system (FCS) possessing "substantially improved strategic mobility and tactical agility, while maintaining overwhelming firepower and crew protection."[2] It is not called a tank because the FCS is envisioned as a vehicle that will be part of a networkcentric force that blurs distinctions between combat branches and blends combat support with the combat branches.[3] The Army must field an FCS to be lighter, faster, and more agile than the Cold War Army yet still meet threats in 2025. We are clearly asking too much of this envisioned FCS.

The need for strategic mobility drives the weight issue and has prompted many suggestions on how to design a lethal, yet lightweight, combat system. Simply carrying fewer rounds because the cannon is accurate and using a smaller crew will make the FCS smaller. A smaller vehicle will have a smaller surface area to protect, will require less armor—with no sacrifice in thickness—and will be lighter with no revolutionary protection needed.

Weight reduction is mandatory, yet the FCS must have no less lethality and survivability than current systems.[4] Envisioned capabilities include flying, tremendous sprint speed, self-healing attributes, and blasting or disabling weapons.[5] A two-man crew is a goal.[6] Crew maintenance and logistics should be minimized to avoid overwhelming the small crew with nonfighting duties. Even combat endurance will be difficult for a small crew. Automatic self-defense is needed to protect a sleeping crew or one that is otherwise incapable of fighting.[7] An external gun turret (EGT) that reduces weight and an advanced cannon are two features sometimes promoted.[8]

The Objective Force will exploit hybrid power systems; fuel consumption reductions of 75 percent; enhanced soldier performance; signature control; and advanced defenses, including active protection, new materials, alternative propellants, chemical and biological protection, and logistic efficiencies.[9] Many of the technical objectives are not expected until 2013.[10] The FCS must be in production by around 2015.[11]

Although different authors project capabilities, some ordinary and some fantastic, the overall tenor

of the debate has a science fair quality.[12] If you could wish for a future combat vehicle, it would be nice to receive one that was beyond your wildest dreams. Reality is likely to be far less comforting in its ability to reconcile the Army's need for power and deployability. It must not count on fielding a system that "pushes the boundaries of technology well beyond what is achievable today."[13] It may be as reasonable just to skip the inconvenient task of building an FCS and just wish for victory. Since the Army cannot replicate "Hammer's Slammers," let's look at the essentials.[14] The basic requirements for a combat system are shooting, moving, surviving, sustaining, and communicating.[15]

A Stryker Mobile Gun System fires its 105mm cannon during field testing.

US Army

The Army must use fewer lift assets and less logistics support to operate in even poorly developed theaters. The FCS will aid this effort if it provides a common chassis for other vehicles. The Army must reduce the bulk and weight of fuel and firepower, minimize in-theater maintenance requirements, and remove support units from the theater. Such a solution, if even possible, may not be wise if it creates a force that is vulnerable to even a hiccup in the supply line.

Shooting

Some mistakenly believe self-guided, long-range missiles will make guns obsolete.[16] The basic weapon for the FCS does not need great range, however. Terrain and obstacles will make extended ranges pointless in only rare situations. Kuwait is the exception. This preference for long-range, direct-fire missiles is especially puzzling, given that conventional wisdom holds that the Army will not fight conventional battles on broken and rolling terrain let alone a desert. Indeed, many futurists view urban warfare as the Army's likely field of battle. Given the varied missions and variety of threats to be defeated, the FCS must be able to shoot at armored vehicles, dismounted infantry, and helicopters.[17] Flexibility for multiple missions alone requires the FCS to be cannon-armed. The cannon need not be revolutionary and should be housed in a turret. The EGT sacrifices valuable interior space, and an advanced cannon may never appear.[18] Existing 105-millimeter (mm) or 120mm cannons are fine.

The Armored Gun System (AGS), for example, mounts a 105mm weapon that can defeat MBTs.[19] The Army can always replace cannons with self-guided, top attack missiles or, even better, introduce top attack cannon rounds. Cannons that can fire cheap, high-explosive rounds will be useful against dismounted infantry and to smash buildings used as fortresses in urban areas.[20] Since 120mm and larger cannons are already standard for MBTs and even larger weapons are envisioned, it may seem absurd to retreat to a smaller cannon. Missiles seem a reasonable alternative for light vehicles that cannot accommodate such mammoth weapons. A different approach that may allow the 105mm to be the weapon of choice for a future FCS is to redefine how we kill armored vehicles. Soft kills based on rounds that blanket a tank with non-penetrating submunitions that disable the vehicle's sensors and communications may be an alternative to heavier, bulkier, and more powerful weapons that can smash through active defenses and traditional armor.[21]

For long-range or beyond-line-of-sight firing, missiles should be part of the force. The power of today's precision weapons is already breathtaking. In the future, separating missiles from the FCS makes the most sense for a networked force. Missile modules, each containing two or more missiles, could be dropped off in the wake of the advancing FCS unit or even scattered by aircraft along the axis of advance in the enemy's rear areas. The FCS crew could control firing. For targets beyond the FCS's area of concern, higher echelon commanders could

US Army

An Armored Gun System coming down the ramp of a C-130. This vehicle has level 1—the lowest level—protection.

Even if we could add armor to level M1A2 standards, that may not be enough in 2025. When smart missiles can target any aspect of a tank regardless of the relative position of the target and firing platform, active defenses that extend protection outward from the simple bulk of armor will be necessary.

plug into all FCS sensors and gain a complete view of the battlefield using unmanned aerial vehicles and air- or tube-delivered sensors.

A variant carrying three or four infantry soldiers is necessary.[22] The infantry version should have an autocannon and allow the troops to fight mounted. The squad is small for dismounted fighting, but the Bradley already put U.S. infantry on the road to smaller squads. Compensating for reduced numbers, Land Warrior project-derived systems will digitize even walking infantry. Individual soldiers will be lethal, in constant communication, and exploit real-time intelligence. Each soldier will have more survivability than current equipment allows.[23] Infantry soldiers may even look forward to personal electronic shields that disarm incoming rounds by disabling their proximity fuses.[24] Dismounts may fight with flying or crawling robots that will see and kill for the soldiers.[25] Small numbers compensated by greater lethality at longer ranges will, however, make such hyperinfantry less appropriate for peace operations where restraint and face-to-face policing are necessary. Situational awareness and long-range personal firepower will be largely useless when soldiers patrol streets that allow civilians to approach within arm's length. Low-tech knives can kill even hypersoldiers under such circumstances.

Moving

Army studies support the conclusion that the FCS should be tracked for tactical movement.[26] Unless the Army anticipates fighting only in theaters with dense road networks, off-road movement must be assumed. Although wheeled vehicles are superior on roads, a road-bound force will simplify enemy mine-laying problems and make movement more predictable. Research prompted by mine experience in Vietnam shows that the United States can design tracks that degrade rather than break, allowing tracked vehicles to escape ambush similar to wheeled vehicles with "run flat" tires.[27] Once in theater, the FCS will be light enough to be capable of vertical envelopment and could break open a static linear battlefield if the enemy sets itself to fight indepth.[28]

For strategic mobility, the FCS should be air landed on roads in all but the most high-threat environments.[29] The need for strategic mobility drives the weight issue and has prompted many suggestions on how to design a lethal, yet lightweight, com-

bat system. Simply carrying fewer rounds because the cannon is accurate and using a smaller crew will make the FCS smaller. A smaller vehicle will have a smaller surface area to protect, will require less armor—with no sacrifice in thickness—and will be lighter with no revolutionary protection needed. Similarly, a smaller engine will reduce volume and therefore the weight of the tank.[30]

In addition to the obvious need to lighten the FCS so it can be airlifted, it must be lighter and smaller to lessen engineering support.[31] The Army cannot afford the time or lift assets to deploy engineers to strengthen bridges, reinforce and widen roads, or widen tunnels so combat vehicles can move. The FCS must also be able to cross water barriers with little or no preparation.[32] As an FCS unit deploys, it should be able to fight with what it has and not rely on later arriving elements.[33] If 30 percent of the unit is deployed, it should be 30 percent as effective as the entire unit.

A dangerous assumption is to think victory is certain and the only challenge is getting to the theater fast enough. If MBTs maintain their dominance with suitable modifications, enemies will have a tremendous advantage over the revolutionary FCS. The Army will get many FCS to the theater, but they may well die in large numbers against evolved dinosaurs. Although the Army would like the upper weight limit to be 39 tons so a C-17 could carry two, increasing the weight beyond 40 tons has been considered.[34] This alone suggests that having MBTs that are strategically deployable without sacrificing survivability may be impossible.

Surviving

Surviving in battle is the major problem the FCS must overcome. MBTs will be obsolete only after an effective successor is produced.[35] Armor protection must be consistent with strategic mobility limitations yet still provide survivability.[36] The AGS weighs about 19 tons with level 1 armor, 22 tons with level 2, and almost 25 tons with level 3.[37] Level 3 armor protects against 30mm cannons.[38] The crew can add the armor, and at level 1, the AGS is airdroppable.[39] Although even level 3 is insufficient for the FCS as envisioned, this modular approach is probably appropriate if developed further. Even if we could add armor to level M1A2 standards, that may not be enough in 2025.

When smart missiles can target any aspect of a tank regardless of the relative position of the target and firing platform, active defenses that extend protection outward from the simple bulk of armor will be necessary.[40] Survivability may also rely on "detection avoidance, hit avoidance, and kill avoidance technologies."[41] But how will an FCS with lethal active defenses operate in cities with friendly dismounts close by? Assuming identification friend or foe solves that problem, what about civilians who will complicate things? Automated lethal defenses that do not distinguish between a rocket-propelled grenade-armed enemy and a fleeing mother cradling her child will routinely lead to tragedy. If the system is turned off in urban areas to carry out peace operations, the FCS becomes a very expensive target that becomes vulnerable to low-tech weapons.

US Army

A Stryker provides overwatch as dismounted infantry engage in MOUT training at Fort Lewis, Washington.

This preference for long-range, direct-fire missiles is especially puzzling, given that conventional wisdom holds that the Army will not fight conventional battles on broken and rolling terrain let alone a desert. Indeed, many futurists view urban warfare as the Army's likely field of battle.

It may be unwise to rely solely on a light FCS if the Army needs a survivable system. If it can find a way around deploying from CONUS, future heavy systems would not need to conform to the tradeoffs necessary for the FCS to get to the theater quickly, and they might exhibit the same dominance as today's MBTs. Pre-positioned future heavy systems, perhaps afloat, should not be overlooked. Where pre-positioning is impractical, sealift from CONUS must be faster. We may even need to explore deploying more forces overseas to get ground troops closer to potential trouble spots for the initial rapid response.

Sustaining

Rapid response will be improved if we only deploy combat units and if those units need less support. The Army must use fewer lift assets and less

logistics support to operate in even poorly developed theaters.[42] The FCS will aid this effort if it provides a common chassis for other vehicles.[43] The Army must reduce the bulk and weight of fuel and firepower, minimize in-theater maintenance requirements, and remove support units from the theater.[44] Such a solution, if even possible, may not be wise if it creates a force that is vulnerable to even a hiccup in the supply line. Think of how simple the enemy's task is if he knows that merely slowing the supply flow can bring great benefits. That is far easier than severing a supply link for weeks as is necessary when iron mountains can sustain forces without a supply line. Some in-theater support and iron hills, as opposed to iron mountains, may be necessary so units can defend themselves at least a short time if the supply link is severed.[45] Otherwise, we rely on an enemy who is too unimaginative, passive, or incapable for secure logistics. The Persian Gulf war taught many Americans that winning is easy, but the Army should not act on that assumption. Underestimating an opponent to that degree would be criminal.

[The Army] must not count on fielding a system that "pushes the boundaries of technology well beyond what is achievable today." It may be as reasonable just to skip the inconvenient task of building an FCS and just wish for victory. . . . Let's look at the essentials. The basic requirements for a combat system are shooting, moving, surviving, sustaining, and communicating.

We must be wary of claims that we have achieved a transparent battlefield and a perfectly responsive force. As Carl von Clausewitz describes, the fog of war is not likely to be dispersed to that level, and our simple movements will still be hampered as if moving through water. The resulting friction may well be fatal to units composed of light vehicles that are unable to detect, let alone absorb, a first blow.

Fortunately, we do not need to assume revolutionary technologies to get results. The Army, while looking at ways to cope with the rising cost of operating the Abrams engine, found that newer, not revolutionary, engines could provide a "four-fold increase in reliability and at least a 35% reduction in fuel consumption without sacrificing current performance."[46] Mundane projects such as these could provide sizable benefits and would not rely on technological breakthroughs. Winning quickly to reduce opportunities for an enemy to disrupt the links from the rear and to reduce logistics requirements overall is an obvious, if problematic, method to enhance sustainability.[47] The very lightness of the FCS could hinder winning quickly.

Communicating

Information dominance is critical to revolutionizing the other factors. Communicating on a digitized battlefield will provide real-time awareness of friendly status, enemy locations, and supply availability, speeding the Army's operational tempo to dominate the battlefield.[48] Communications will allow the FCS to direct distant firepower if it does not use its own cannon. An FCS will identify a target, and the appropriate missile module, helicopter, aircraft, or artillery asset will destroy the target. The source of the warhead will not matter. Use of self-guided missiles for long-range fire can be exploited in stages depending on the state of the art. The FCS will be introduced into a digitized Army when it goes into production in 2015.[49] Initially, the FCS could carry missiles as the Bradley does today. Perhaps digitization will allow the FCS-mounted missiles to be fired remotely by another spotter. Eventually, we may be able to improve flexibility and reduce FCS weight and maintenance needs if we separate the missiles from the spotter.

In an interim step, the missiles could be separated out into firebases with missile modules deployed in groups that leapfrog to support the FCS. When networkcentric warfare matures, the missile modules can be dispersed so no vulnerable missile farms tempt an enemy and could be used as was described in the shooting section of this article. Ensuring the FCS shoots first could also alleviate the armor problem. As with winning quickly, guaranteeing the first shot, especially on the offensive, is easier said than done. We must be wary of claims that we have achieved a transparent battlefield and a perfectly responsive force. As Carl von Clausewitz describes, the fog of war is not likely to be dispersed to that level, and our simple movements will still be hampered as if moving through water. The resulting friction may well be fatal to units composed of light vehicles that are unable to detect, let alone absorb, a first blow.

The collapse of the Soviet Union transformed our strategic environment overnight. More than a decade later, the Army still fields systems designed for that era. A new, lighter vehicle suitable for a wide range of missions is necessary. The FCS may solve the Army's strategic mobility problem, but it threatens to truncate the Army's dominance of the conflict if

it is not as good as it needs to be. Even at 39 tons, the FCS may be too light if evolved MBTs retain their place on the battlefield. In addition, small numbers of FCS-mounted hyperinfantry will not be able to exploit their killing power in peace operations.

A light, cannon-armed FCS with an antitank guided missile attached and plugged into a tactical network will handle many moderate conventional threats and will be useful in stability operations. Experience with IBCTs may well give the Army a better sense of what light armor can do and lead it to accept that it cannot succeed in all threat environments. The IBCT has a limited role as an early entry force and clearly recognizes that it is not the main fighting force. It will eventually be supplanted by heavier divisions if the enemy is heavy and will fight as a maneuver unit of a division.[50] The Objective Force is to blur that distinction so that the light forces are the main fighting force. The FCS is critical to making this happen.

Building the FCS, however, is a high-risk venture. The Army should not spend whatever it takes attempting to meld multiple revolutionary technologies into one vehicle for all missions. The FCS should be different from the Abrams and Bradley but must be designed with near-term technology that incorporates modular improvements if the Army is to turn "gee whiz" ideas into actual hardware. Separated missiles and a sensor grid; active defenses; EGTs; and exotic engines, fuels, and weapons can be retrofitted to defeat more capable enemies. Barring successfully fielding exotic technologies to make the FCS work, the Army must consider how it will defeat future heavy systems if fighting actual enemies and not merely suppressing disorder becomes its mission once again. The tentative assumptions of 2001 will change by 2025. When they do, the Army will rue its failure today to accept that the wonder tank will not be built. ***MR***

Compensating for reduced numbers, Land Warrior project-derived systems will digitize even walking infantry. Individual soldiers will be lethal, in constant communication, and exploit real-time intelligence. Each soldier will have more survivability than current equipment allows. Infantry soldiers may even look forward to personal electronic shields that disarm incoming rounds by disabling their proximity fuses.

NOTES

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14. The futuristic mercenary armored brigade science fiction author David Drake envisioned.
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19. Scott R. Gourley, "Armored Gun System," *Army* (June 2000), 66.
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Brian J. Dunn is a nonpartisan research analyst for the Michigan Legislative Bureau. He received a B.A. from the University of Michigan and an M.A. from Eastern Michigan University. He served as a member of the Michigan Army National Guard. He taught history at Henry Ford Community College. His article "The Path of the Future Army" appeared in the September-October 2000 Military Review.

Air Power Targeting Theory: A Key Element in Transformation

Lieutenant Colonel Price T. Bingham, U.S. Air Force, Retired

MILITARY THEORY provides valuable guidance on how to effectively exploit new technologies through its explanation of cause-and-effect relationships. Given the importance of air power to U.S. military strategy, air power targeting theory should play a key role in transformation decisions.

U.S. Air Force leaders are advocating a targeting theory called effects-based operations (EBO) that is very similar to the functionally oriented targeting theory that airmen applied during World War II strategic bombing campaigns.[1] As the name implies, functionally oriented targeting is designed to create effects that make it impossible for a specific system to perform a function that is vital to an enemy's ability or will to continue effective resistance. It calls for achieving systemwide functional effects without destroying a significant part of the entire system. Compared to attrition-oriented targeting that relies on achieving objectives through causing massive destruction, a functional orientation has the potential to provide many important advantages. These advantages are derived from the potential to achieve desired objectives faster and with far fewer casualties, whether those casualties are friendly, civilian, or enemy.

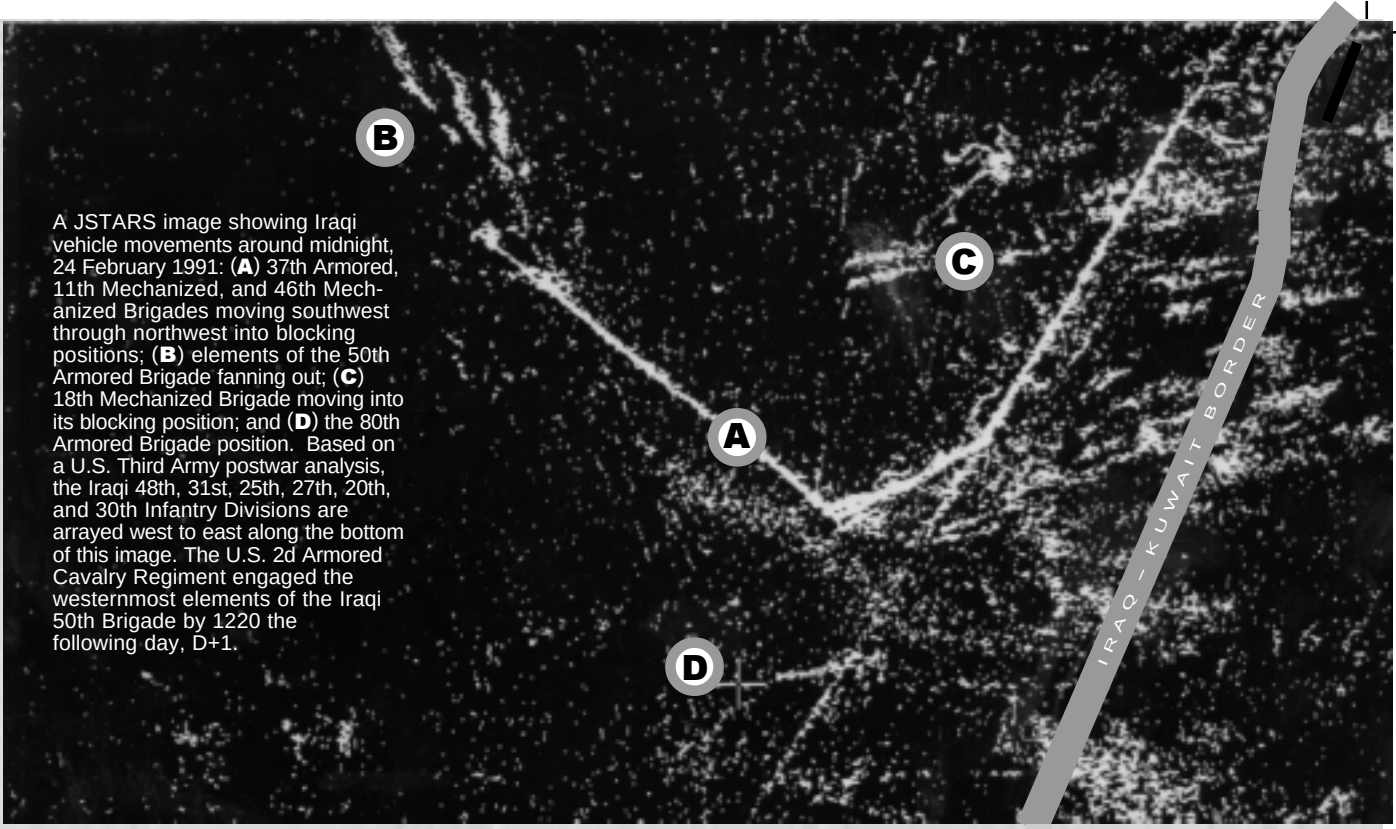
Much of the current interest in the functionally oriented targeting theory can be traced to the ability of stealth and precision-guided munitions technologies to overcome the problems of high losses and poor accuracy that handicapped strategic attacks during World War II.[2] Many air power supporters believe these technologies explain the dramatic outcome of Operation Desert Storm.[3] They also assert that using the B-2 bomber and the global positioning system (GPS)-guided joint direct attack munition (JDAM) made a decisive contribution to Operation Allied Force in Kosovo.[4] Although Air Force EBO discussions focus almost exclusively on the advantages associated with strategic targeting, recent developments in technology make it necessary to consider the advantages of a functional, rather than an attrition, orientation when targeting fielded land forces.[5]

Targeting Requirements

To understand the transformation potential of functionally oriented targeting, it is necessary to apply a perspective to requirements that extends well beyond the survivability of attacking aircraft and the accuracy with which they can deliver their payloads. This wider perspective reveals that the viability of functionally oriented targeting, regardless of whether the target set is a strategic system or fielded land force, depends on meeting a set of five requirements, each of which is essential to success.

Widespread vehicular paralysis can be achieved quickly and without destroying excessively large numbers of vehicles, perhaps only hundreds of vehicles. Such success is possible when targeting decisions are designed to influence the behavior of enemy soldiers by creating and then exploiting fully their perception of an immense danger from air attack if they were to attempt to move.

Target identification. The first step in target identification is identifying the political, economic, and military systems that perform functions that are critical to a specific enemy's ability or will to resist. The next step is to identify critical elements, subsystems, or nodes that define a particular system. Identifying which specific elements make suitable targets requires analyzing how attacks against these elements will contribute to achieving the desired functional effects on the entire system. It also requires determining whether targeting specific elements could be counterproductive to the overall objective. For example, depending on the objective, it may not be acceptable to risk inflicting large numbers of civilian casualties even though targeting a specific element would render an entire vital system functionally ineffective.



A JSTARS image showing Iraqi vehicle movements around midnight, 24 February 1991: (**A**) 37th Armored, 11th Mechanized, and 46th Mechanized Brigades moving southwest through northwest into blocking positions; (**B**) elements of the 50th Armored Brigade fanning out; (**C**) 18th Mechanized Brigade moving into its blocking position; and (**D**) the 80th Armored Brigade position. Based on a U.S. Third Army postwar analysis, the Iraqi 48th, 31st, 25th, 27th, 20th, and 30th Infantry Divisions are arrayed west to east along the bottom of this image. The U.S. 2d Armored Cavalry Regiment engaged the westernmost elements of the Iraqi 50th Brigade by 1220 the following day, D+1.

[By 1990] advances in airborne ground surveillance radar technology made it possible . . . to eliminate the need for visual searches. JSTARS could reliably detect, accurately locate, and precisely track vehicles moving throughout a large surface area in all conditions. . . . One key difference between Operation Allied Force and the Gulf war was the Serb tactic of intermingling military vehicles within refugee traffic. This tactic prevented NATO air forces from relying on JSTARS radar for targeting to the degree that had been possible during the Gulf war.

Target location. Once specific elements are identified as suitable targets, they must be located reliably and precisely; in darkness and adverse weather; despite enemy camouflage, concealment, and deception measures. Precision requires timely information when targets are mobile or relocatable. Effectiveness requires the ability to pass target location information directly to attacking weapon systems.

Attack system survivability. The theory's feasibility requires that weapon systems, especially manned aircraft and uninhabited combat air vehicles, be able to deliver their munitions at an acceptably low risk of loss from an enemy's air defenses.

Munitions. Munitions must possess sufficient precision in all conditions, including darkness and adverse weather, to deliver enough force to achieve effects that will prevent the targeted system from continuing to function effectively. It is also essential that the same effects that prevent the targeted system from functioning effectively have an acceptably low risk of inflicting large numbers of civilian casualties or significant amounts of collateral damage.

Assessment. The fifth requirement is to assess reliably and quickly, regardless of darkness and weather, the magnitude of the contribution specific attacks are making in achieving the desired systemwide functional effect.

Strategic Targeting Challenges

Operations Desert Storm and Allied Force provide evidence that, despite developments in stealth and precision-guided munitions, there are real challenges to meeting the requirements for effective functionally oriented strategic targeting. Identifying a strategic system whose functioning is critical to an adversary's ability or will to continue effective resistance proved to be difficult. For example, some critics are not convinced that strategic attacks in the Gulf war and Operation Allied Force contributed significantly to attaining the desired objectives.[6]

The lack of consensus on effectiveness is evidence of possible soft spots in the capabilities required for strategic targeting. One soft spot results from evidence that an adversary's camouflage, concealment, deception measures, and use of mobility have made it difficult to locate valid targets within command and control systems and the development of weapons of mass destruction. Even when located, hardened targets have made it difficult to achieve desired effects. Ensuring an acceptably low risk of civilian casualties is also an acute problem. The leaders of Serbia and Iraq have demonstrated that they are more than willing to put their own citizens, let alone hostages, at risk by locating them in and around likely targets.

Potential for Functionally Oriented Land Force Targeting

While there are potentially significant challenges remaining to be solved before it is safe to assume that strategic targeting will be effective, developments in surveillance and targeting technologies are providing excellent potential for meeting the requirements for the functionally oriented targeting of fielded land forces. Fielded forces' vulnerability results from the system of motorized vehicles that almost all land forces now rely on for movement.

Developments such as the low-cost antiarmor submunition and brilliant antitank submunition provide the potential to counter an army's ability to move in small convoys or with military vehicles intermingled with civilian vehicles . . . even when they move in adverse weather and darkness.

Movement is vital to their effective operation because it is how they achieve the advantages of surprise, superior force ratios, and favorable positions. Increasingly, the United States is finding that potential adversaries rely on mobility to obtain protection by making target location information perishable and, thus, unreliable.

When functionally oriented targeting can stop, not merely delay, a land force's militarily significant vehicular movement, it has the potential to keep an adversary from continuing resistance.[7] One way to do this is through denial since both a successful offense and defense depend on the ability of land forces to move effectively in response to or in anticipation of friendly land maneuver. Another way is through coercion since most potential adversaries depend on special police and army forces to remain in power. The prospect of these forces losing their ability to move and function effectively could cause successful coercion because of increased risk of being overthrown by internal revolt.

Within an army's system for movement, an occupied moving vehicle is a potential target. Occupied vehicles are susceptible because of the vital role they play in the effective functioning of armies as well as many paramilitary units. Vehicles not only provide mobility, they also provide heavy firepower, armored protection, supplies, sensors (radar), communications, and engineering support. Other good targets are nodes that support or constrain vehicular movement such as refueling, rearming, repair, and transshipment points, and bridges and tunnels.

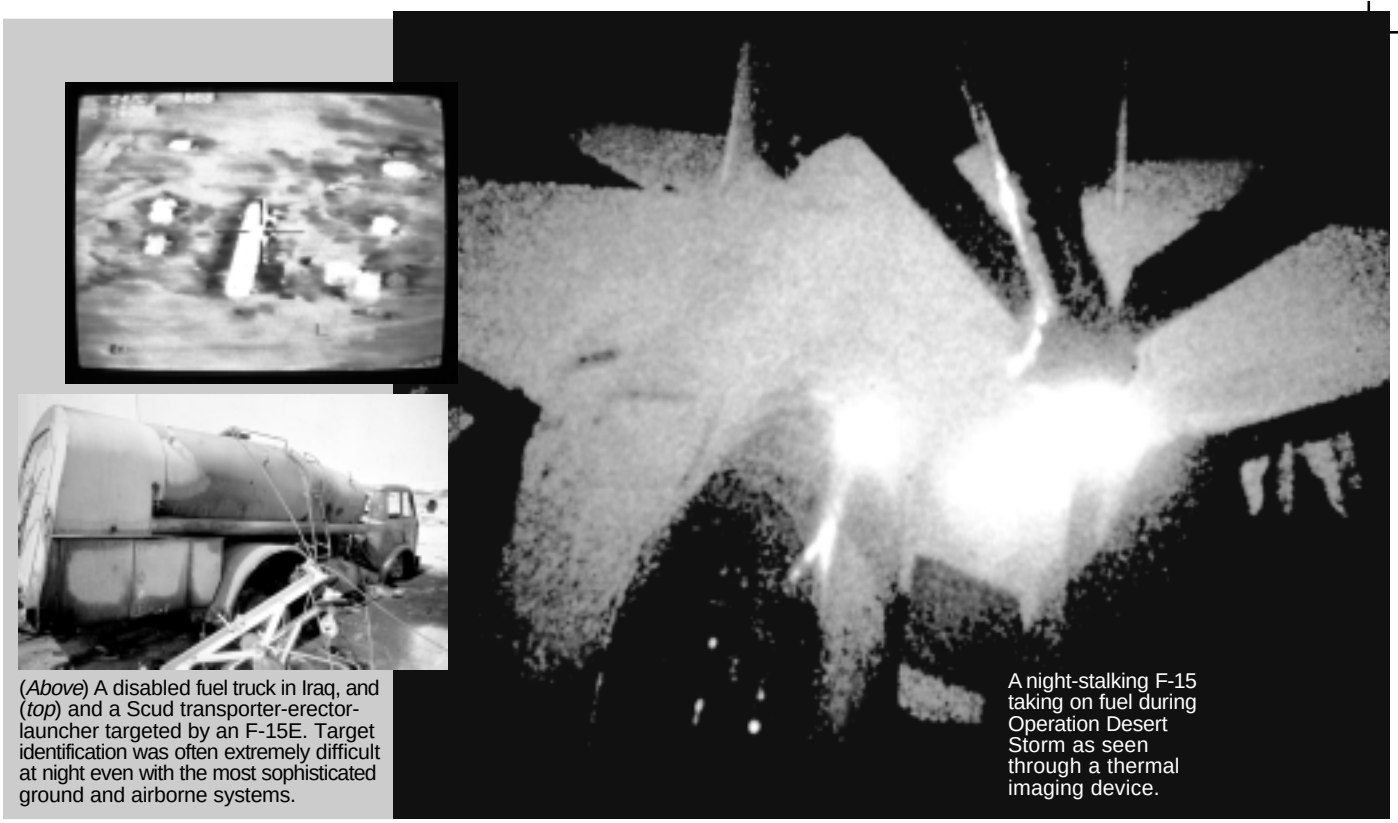
Given the key roles movement and vehicles play in the ability of fielded land forces to function, stopping militarily significant vehicular movement can quickly degrade or even destroy the ability to conduct effective offensive or defensive operations. Stopping movement would also reduce the need for friendly land forces to fight close, sustained battles with powerful units. Close battles will almost always still be necessary, but with functionally oriented targeting, these battles would be fought against units weakened by the loss of the important advantages vehicles and their movement can provide. Stopping an enemy's movement would provide U.S. forces with the maneuver dominance necessary to make medium-weight forces sufficient for defeating an enemy army at minimum risk.

The Role of Danger

The key to understanding the ability of functionally oriented targeting to quickly stop an enemy's vehicular movement is to recognize that it does not depend on physically destroying large numbers of vehicles. Widespread vehicular paralysis can be achieved quickly and without destroying excessively large numbers of vehicles, perhaps only hundreds of vehicles. Such success is possible when targeting decisions are designed to influence the behavior of enemy soldiers by creating and then exploiting fully their perception of an immense danger from air attack if they were to attempt to move.

Theorist Carl von Clausewitz recognizes that many neglect the importance of danger: "they direct their inquiry exclusively toward physical quantities, whereas all military action is intertwined with psychological forces and effects."[8] He also notes that "Danger is part of the friction of war. Without an accurate conception of danger we cannot understand war."[9] The ability of air attacks to quickly create and then maintain a perception of danger that causes militarily significant functional changes in behavior was especially apparent in suppression of enemy air defense (SEAD) operations during Operations Desert Storm and Allied Force. In both conflicts, it took relatively few precision attacks to persuade large numbers of surviving surface-to-air missile system operators to reduce their perceived danger by not letting their radar emit frequently or for very long periods of time.[10]

The perception of immense danger from air attack has had a similar impact on soldiers' behavior. Analyzing air operations in Normandy during World War II, the Gulf war, and Kosovo shows soldiers exhibiting similar behavior. In all three conflicts, soldiers occupying vehicles often stopped moving and even abandoned their vehicles as soon as they perceived that they were likely to be the tar-



Delta, MBI Publishing

(*Above*) A disabled fuel truck in Iraq, and (*top*) and a Scud transporter-erector-launcher targeted by an F-15E. Target identification was often extremely difficult at night even with the most sophisticated ground and airborne systems.

A night-stalking F-15 taking on fuel during Operation Desert Storm as seen through a thermal imaging device.

Technology developments are providing the United States with the potential to possess all of the capabilities required for functionally oriented targeting to quickly stop militarily significant movement within a large area while minimizing the risk of civilian casualties. The key enabling development is the radar upgrade known as the Multi Platform-Radar Technology Insertion Program (MP-RTIP).

get of an air attack. In each case, few would risk movement when conditions made air attacks likely. It is important to note that in all of these conflicts this effect was achieved despite the relatively small number of vehicles actually being hit and destroyed by air attack.[11]

The Importance of Technological Developments

Unfortunately, during all of these conflicts, the effect of paralysis achieved by vehicle attacks was not widespread and could not be sustained. During World War II, one reason was the requirement to locate German vehicles through a visual search performed by fighter-bomber pilots flying armed reconnaissance. These pilots' limited field of view made it necessary to fly large numbers of sorties to achieve paralysis even over a relatively shallow area behind the front lines. The low altitudes required to make an effective visual search and a precise attack—often through strafing—increased aircraft exposure to point air defenses, resulting in significant losses of aircraft and pilots.

Although the Allies could generate large numbers of sorties and absorb the high losses, their reliance on visual searches made it impossible for them to sustain paralysis during darkness or adverse weather. The German army was quick to exploit this limitation. Although German forces soon confined almost all of their movement to hours of darkness and periods of adverse weather, moving during these times was sufficient for their forces to achieve the force ratios, position, and surprise that made the close battle in Normandy extremely costly for Allied armies.

But, during the Gulf war, there was an important development. Advances in airborne ground surveillance radar technology made it possible for a prototype command, control, intelligence, surveillance, and reconnaissance (C2ISR) system, the Joint Surveillance Target Attack Radar System (JSTARS), to eliminate the need for visual searches. JSTARS could reliably detect, accurately locate, and precisely track vehicles moving throughout a large surface area in all conditions. Equally important for targeting mobile land forces, the system possessed the large onboard crew needed to make timely targeting decisions and the robust communications that could attack aircraft with accurate and timely targeting information. However, since there were only two systems available, they were unable to perform a persistent search over any single portion of the theater. Even when one of the systems was available, its ability to achieve and sustain Iraqi vehicular paralysis was limited to periods of good visibility that U.S. fighter and attack aircraft required

to make precision attacks.[12]

During Operation Allied Force, adverse weather seriously handicapped air operations. As for the Gulf war, there were still not enough JSTARS available to maintain a persistent search, even over an area as small as Kosovo. Yet another problem was the failure to learn from the Gulf war. When JSTARS first deployed, senior airmen, their staffs, and most fighter pilots were unfamiliar with JSTARS' capabilities and limitations. Gradually, as was the case in the Gulf war, pilots discovered JSTARS' ability to provide them with lucrative moving targets. One F-16 squadron commander stated, "JSTARS became my hero."[13] Because JSTARS detected movers, pilots could be confident that they were not wasting an attack on a previously destroyed vehicle or decoy.

Not only would functionally oriented targeting make it difficult for an enemy to achieve the advantages of mass, position, and surprise, but the same real-time information used for targeting would also allow the friendly land forces to use their maneuver to avoid fighting enemy forces except under ideal conditions.

One key difference between Operation Allied Force and the Gulf war was the Serb tactic of intermingling military vehicles within refugee traffic.[14] This tactic prevented NATO air forces from relying on JSTARS radar for targeting to the degree that had been possible during the Gulf war. To reduce the risk of targeting civilians, NATO pilots had to determine visually whether a specific vehicle was military or civilian. Even when JSTARS radar information cued pilots on suspected Serb movement, the requirement for visual identification made timely targeting of Serb mobile forces extremely difficult. Often, Serb forces were able to exploit the time required for visual target identification to disperse and hide.

But now technology developments are providing the United States with the potential to possess all of the capabilities required for functionally oriented targeting to quickly stop militarily significant movement within a large area while minimizing the risk of civilian casualties. The key enabling development is the radar upgrade known as the Multi Platform-Radar Technology Insertion Program (MP-RTIP). The high-power, multiple-mode radar will make it possible for a C2ISR system to accurately locate, automatically track, reliably characterize, and precisely target air attacks against individual vehicles moving within a large area, even in dense traffic and during adverse weather or darkness. The radar's automatic tracking is the key to minimizing the risk of civilian casualties because it identifies, perhaps from an unmanned aerial vehicle video collected earlier on a track, specific vehicles as military or civilian.

An MP-RTIP-equipped C2ISR system's ability to track and characterize vehicles will also make it easy to trace tracks back to their sources to locate and target critical nodal points such as vehicle refueling points. These nodes could be refueling and missile storage points for missile transporter-erector-launcher (TEL) systems. The same ability of the C2ISR system to detect, locate, characterize, and target individual vehicles will make it possible to quickly and reliably assess whether attacks are achieving the desired functional effect. The system can instantly assess an attack's success because it can see whether vehicular movement has stopped. With a functional orientation, it is not necessary to know whether an attack destroyed the vehicle or made its crew too afraid to move and caused them to abandon it.

Just as important to effectively targeting land forces is the fact that these enhanced surveillance and targeting capabilities are being complemented by developments in precision weapons technology. JDAM and the Wind-Corrected Munitions Dispenser System are making it possible to target fixed nodal points of a fielded force's movement system precisely in all weather conditions. These munitions can also stop and quickly destroy convoys before the vehicles and their occupants can disperse.

Even more important, developments such as the low-cost antiarmor submunition and brilliant antitank submunition provide the potential to counter an army's ability to move in small convoys or with military vehicles intermingled with civilian vehicles. The key to success is the potential of these submunitions to use their sophisticated sensors and software to accurately characterize and precisely target individual military vehicles even when they move in adverse weather and darkness. With the ability to precisely target specific military vehicles, it would be possible to avoid causing collateral damage to nearby buildings or civilian vehicles. Further risk reduction could be achieved by waiting to target military vehicles until after they have moved out of areas where large numbers of civilians and buildings are located.[15]

The same technologies that make it feasible to target an enemy's military vehicles also provide the advantage of dramatically reducing the risks facing friendly military personnel. On the ground, stopping militarily significant enemy movement would mean that friendly forces would have less need to fight powerful enemy units. Not only would functionally oriented targeting make it difficult for an enemy to achieve the advantages of mass, position, and surprise, but the same real-time information used for

targeting would also allow the friendly land forces to use their maneuver to avoid fighting enemy forces except under ideal conditions.

Should an enemy's movement present a threat to a friendly unit, this same movement would make the enemy visible to the C2ISR system's sensor and extremely vulnerable to devastating air and artillery attacks. Besides making it likely that the enemy unit would be quickly destroyed, these attacks would also make it impossible for the enemy to match the speed of the friendly unit's maneuver. In the air, the C2ISR system's high-power radar reduces risks by making it possible to see a very large area while flying at a safe standoff distance from an enemy's surface-based air defenses. Also reducing risks are GPS and sensor developments that make it possible for U.S. aircraft to precisely deliver their weapons from medium altitude, well above the reach of the difficult-to-suppress, nonradar-guided air defenses.

Other Applications for Functionally Oriented Targeting Technology

It is important to note that the same enhanced surveillance capabilities MP-RTIP provides will have many other important applications in both war and peace. During war, the ability to precisely track and characterize individual vehicles will be invaluable for supporting counterair operations by making it easier to detect and target missile TELs. In peace, it will provide reliable and early indications and warnings of potential aggression, help verify treaties, and contribute to confidence-building measures. Precise, real-time surveillance of movement will also make crisis management much easier by making it possible to see if diplomatic and military actions are having the desired effect of causing forces to stop movements.

Although developments promise to make it technically feasible to apply the functionally oriented air power targeting theory to fielded land forces, realizing the advantages of such targeting is unlikely unless the Department of Defense takes further action. Clearly, the United States must devote the necessary resources to completing the development of the required technologies. For C2ISR systems, this means accelerating the development of the technically low-risk MP-RTIP. Next, it is necessary to field MP-RTIP-equipped C2ISR systems in the appropriate numbers. The current requirement for 19 JSTARS did not consider either the immense advantages provided by the functionally oriented targeting theory or the system's value during peacetime operations.[16]

As important as technology can be to success, it is not sufficient by itself. Success requires institutionalizing the targeting theory in joint and service doctrine and training. Clearly, given its ability to guide thinking on key cause-and-effect relationships, the functionally oriented air power targeting theory can and should play a valuable role in helping determine future force structure and training requirements. ***MR***

NOTES

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3. John T. Correll, "In the Wake of the Storm," *AIR FORCE* Magazine (January 2001), 2.
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8. Carl von Clausewitz, *On War*, ed. and trans. by Michael Howard and Peter Paret (Princeton, NJ: Princeton University Press, 1984), 136.
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11. Ian Gooderson, *Air Power at the Battlefront: Allied Close Air Support in Europe 1943-5*, (London: Frank Cass, 1998), 110-11 and 116-17; Keaney and Cohen, 93-94 and 101-103; and *Kosovo/Operation Allied Force After-Action Report*, Report to Congress (Washington, DC: Department of Defense, 31 January 2000), 80-87.
12. James Titus, *The Battle of Khafji: An Overview and Preliminary Analysis* (Maxwell AFB, AL: Airpower Research Institute, September 1996), 20; and Keaney and Cohen, 145-46 and 161-62.
13. "Allied Force Pilots Say Improved Training Key to Strike Operations," *Inside the Air Force* (13 October 2000), 7.
14. *Kosovo/Operation Allied Force After-Action Report*, 62.
15. The combination of developments in C2ISR systems and precision weapons will make it easy to defeat most concealment and camouflage measures because movement puts vehicles out in the open. Precisely tracking individual vehicle movement will make it possible to locate where they stop, helping defeat enemy attempts to camouflage or conceal the vehicles. Where high-value vehicles, like transporter-erector-launchers (TELs), are concealed within the movement of large numbers of other vehicles, stopping militarily significant movement will reduce the amount of cover other vehicles provide. Decreased traffic will make high-value vehicles stand out and make them easy to locate and target if they continue to move. Deception will also lose much of its effectiveness because using decoy vehicles that move is neither productive nor feasible on a large scale. When an adversary uses decoys that move, as may be the case with TELs, the perceived of danger that stops the militarily significant movement of army units should help have a similar effect on occupants of the decoy vehicles, doing much to neutralize the effectiveness of this deception measure.
16. "Loh Sees Need for More JSTARS; Services Eye Increase to Over 30," *Inside the Air Force* (25 February 1994).

Lieutenant Colonel Price T. Bingham, U.S. Air Force, Retired, is employed by Northrop Grumman, the prime contractor for JSTARS. He received a B.S. from the U.S. Air Force Academy and an M.S. from the University of Alabama and is a graduate of the Air Command and Staff College and Air War College. He flew fighters in the United States, Europe, and Southeast Asia, serving 3 years with the Military Assistance Command, Vietnam's tactical air control center. He contributed to developing air power doctrine while serving on the Air Staff and at the Air University.

Will Army Aviation Be Invited to Play in the Next War?

Colonel Lewis M. Jamison, U.S. Air Force, Retired

WHEN THE WAR in Afghanistan began in October 2001, the commander in chief, U.S. Central Command (CINCENT), called for Central Intelligence Agency operatives; Special Operations Forces soldiers; ground elements of the 10th Mountain Division; and the U.S. Marines with air support from the Special Forces, U.S. Navy, U.S. Marine Corps, and U.S. Air Force (USAF). It was not until January 2002 that Army aviation—in the form of the 101st Airborne Division—arrived with aviation units near Kandahar, Afghanistan.

While this order of force commitment seems reasonable, given the special forces' deep operations training and expertise and the Marines' mission to be first over the beach, it is still surprising that the 101st Airborne Division was not in theater until 3 months after the joint operation had begun. After all, from a joint perspective, the 101st maintains a high training state, strategic mobility with relatively light deployment loads, theater mobility with its helicopter support and airborne delivery training, and deep operations capabilities.

In fact, Army aviation as a whole offers much toward fulfilling the operational concepts of Joint Vision 2010, in particular, dominant maneuver, precision engagement, and full-dimension protection. As a maneuver force, attack and lift assets can move heavy-hitting munitions and assault-capable warriors around the battlefield as no other asset can. It can place firepower quickly on distributed targets and project fires at ranges that afford self-protection and protect supported ground forces. Lift helicopters can move ground forces to distant objectives quickly. Attack helicopters can put tremendous firepower precisely on distant targets or dominate a forward battle position—just as a holding force of many troops can do—and they can protect an advancing maneuver force, escort and protect an air assault force on ingress and egress, or perform sentinel duties over a resting brigade.

How can the Army ensure that Army aviation plays a key role in future joint operations? First, Army aviation must make itself more deployable. Second, it must make itself more survivable. And, finally, related to survivability, it must be part of the joint force air component commander's air tasking order.

Given what Army aviation has to offer, how can the Army ensure that Army aviation plays a key role in future joint operations? First, Army aviation must make itself more deployable. Second, it must make itself more survivable. And, finally, related to survivability, it must be part of the joint force air component commander's (JFACC's) air tasking order (ATO).

Army Aviation Must Make Itself More Deployable

When airlifter allocations are decided for joint operations, the worth of Army aviation assets in combat is weighed against what other military assets can offer in effectiveness and reliability. Thus, the ability to deploy quickly is critical. When asked to deploy, Army attack and support helicopters have self-deployment capabilities for the airframes themselves; however, they have no airborne refueling abilities, as some special forces helicopters have. As a result, attack helicopters must make stops every 750 nautical miles (1,200 for the future Comanche), not enough range for safe overseas deployments.[1] If self-deployment is used, a helicopter battalion depends on a large contingent of support personnel and equipment during en route stops and in the battle area. That support force, in turn, needs C-17s and C-5s to reach a destination. An entire Apache bat-

talion, including all its aircraft, requires airlift of at least 41 C-17s and 25 C-5s. Unfortunately, these airlifters must be shared with the whole Army and Air Force and some Navy and Marine forces. In fact, the Army's 10th Mountain Division was deployed to Uzbekistan in October 2001; however, it was asked to deploy only its light infantry and not its division aviation assets.

Army aviation is clearly working on the problem. For example, significant effort is being made to reduce the 1,335 to 2,000 short tons that each Comanche battalion is projected to need on deployments.[2] This figure should be reduced in planning for the 2008 appearance of a Comanche unit. However, other options are also worthy of consideration. For example, significant weight savings can be achieved by designating lead battalions that bring a full set of equipment and follower battalions that could collocate, bring less equipment and parts, and rely on the lead unit for seldom-used equipment and parts. The Air Force has used this system successfully when deploying fighter squadrons. The Army aviation footprint may also be shrunk by continuing to develop the concept of depending more on continental United States (CONUS)-based resources for repair and parts. This concept would save valuable airlift initially but would need an ironclad promise of continuing airlift availability for backhauling parts and equipment for repair in CONUS and forward transport of replacement equipment and parts. This arrangement would be a high-risk operation unless very firm commitments are made and backup guarantees (more civilian airlift if necessary) are assured.

The U.S. Marine Corps is fortunate to have Navy aircraft carriers and landing helicopter assault ships to transport their helicopters and support systems to a theater of operations. That capability has made Marine aviation a solution to getting boots on the ground and countering enemy ground forces with AH-1W Super Cobra gunships on the day of landing in southern Afghanistan during November 2001. The carrier or assault ship solution for Army aviation to get to war is a possibility when a 96-hour criterion for arrival at a destination is not demanded.

Airborne deployment of ground forces within a theater can give the theater commander great flexibility and an advantage in shaping a battlefield. C-130 aircraft are now used for this job; however, the aircraft are tied to prepared runways or landing strips that may not be located where needed. An advanced transport rotorcraft (ATR), capable of carrying the heaviest future combat vehicle of 20 or more tons, has been advocated as the Army's answer for nonrunway landings in forward areas.[3] The ATR would offer Army aviation a capability comparable to that of the Marines' MV-22 rotorcraft that is smaller and is now struggling to become operational with Marine forces.

For radar-directed threats, the AH-64D Longbows now have available, and the coming Comanche will have available, a fire control radar (FCR) that can locate all types of targets while the attacker may still be undetected. . . . Unfortunately, the Army is planning to buy fewer than one for one FCRs per aircraft, a strategy that will force some attack team members to depend on FCR-equipped members for target assignments.

Finally, to expedite employing AH-64 Apache battalions in battle, deploying battalions with the Air Force's Aerospace Expeditionary Force and its initial deep attack employment under the air component commander has been explored in a recent publication.[4] This concept would reduce the support forces needed to protect and service a stand-alone Army aviation battalion and would benefit from national and theater airborne surveillance and control assets shared with Air Force units.

Army Aviation Must Be More Survivable

Once Army aviation gets to the battle, it has to be able to survive. Survivability factors vary according to the arena one plays in. Attack helicopters push out into hostile countryside that may be armed with various threats, from radar-directed surface-to-air missiles (SAMs) to man-portable air defense systems (MANPADS), all dangerous but in different ways. SAMs are avoided by good intelligence preparation of the battlefield before a mission and by good sensor detection during a mission. Failing avoidance, the threat must be killed by attack helicopter, artillery, or tactical air attack. This situation raises the risk to an attack mission and may divert attack assets from their assigned objective. Regardless of the situation, each must be planned for and appropriate assets assigned to make the original attack mission possible.

Just as the Army is working on deployment issues, it is also working on survivability issues. For radar-directed threats, the AH-64D Longbows now have available, and the coming Comanche will have available, a fire control radar (FCR) that can locate

US Navy

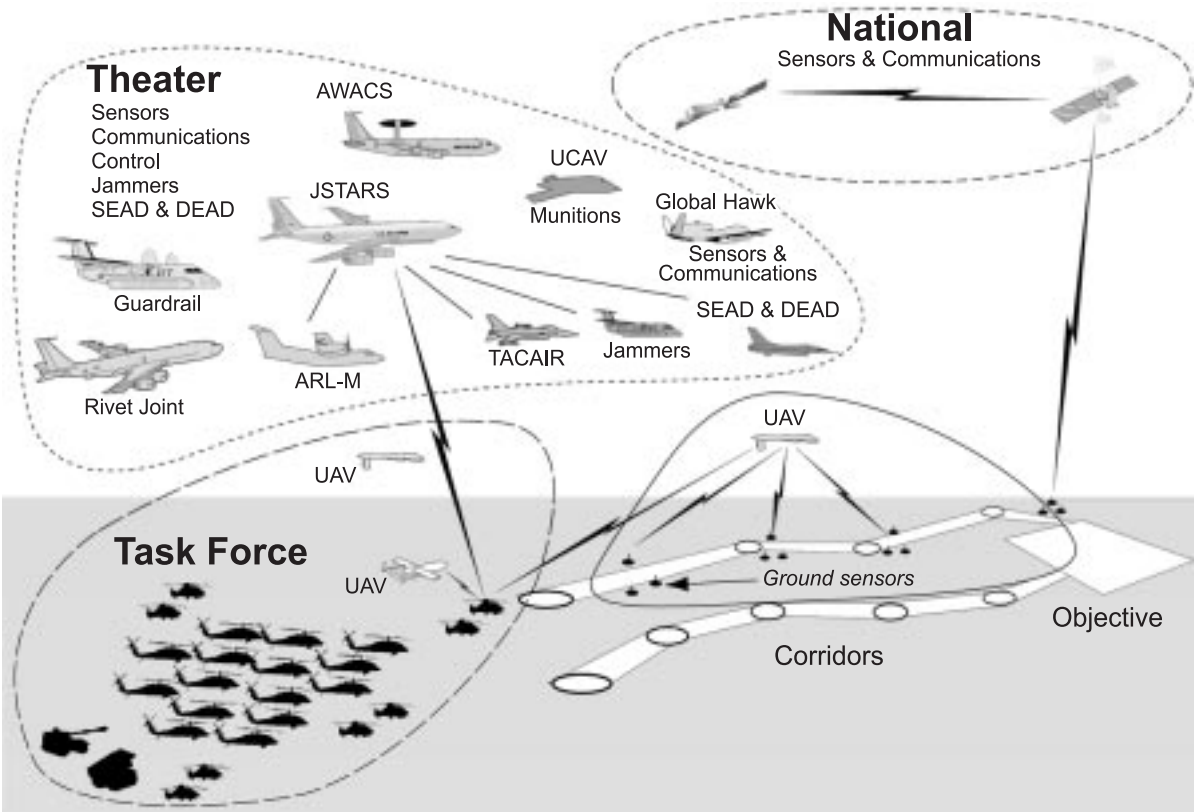
A trio of CH-46 Sea Knights practice deck landings on the USS *Bonhomme Richard* during a large-scale amphibious exercise near Camp Pendleton, California, April 2001. The *Bonhomme Richard* and its sister ships each carry 42 Sea Knights.

The U.S. Marine Corps is fortunate to have Navy aircraft carriers and landing helicopter assault ships to transport their helicopters and support systems to a theater of operations. That capability has made Marine aviation a solution to getting boots on the ground and countering enemy ground forces with AH-1W Super Cobra gunships on the day of landing in southern Afghanistan during November 2001.

all types of targets while the attacker may still be undetected. The FCR is mounted above the rotors so the aircraft's full profile can remain hidden during FCR use. This feature is essential to survival, essential to target acquisition for a team of attackers, and, thus, essential for all Longbows and Comanches. Unfortunately, the Army is planning to buy fewer than one for one FCRs per aircraft, a strategy that will force some attack team members to depend on FCR-equipped members for target assignments. That places the FCR members in greater jeopardy and reduces the team's efficiency and effectiveness significantly. A better option would be to reduce the number of Comanches but equip them all with FCR.

For MANPADS, the Army has decided to equip the Longbows with an advanced-threat infrared countermeasures system with a warning system and expendable countermeasures dispenser; however, this will not take place until 2004, after which UH-60 Black Hawks and CH-47 Chinooks will be similarly equipped. However, the Comanche will not receive the system; plans still rely on using stealth and no active defense. The Air Force, Navy, and Marine Corps are each developing counters to MANPADS for their fighters. The Department of Defense's initiative to create the joint aircraft survivability to MANPADS is a strong recognition of the MANPADS threat to all aircraft and the principal one to Apache and Comanche operations.[5] Visually directed munitions will be a continuing threat to attack aviation, a threat highlighted in John Bowden's book, *Black Hawk Down*, the story of an air assault in downtown Mogadishu, Somalia, and faced directly in the reluctance to commit Apaches to combat in Kosovo.[6]

Black Hawk Down also describes abysmal command and control (C2) of U.S. Delta and Army forces that conducted a raid in a hostile urban environment. Poor force commitments, unorganized airborne surveillance and control of ground force elements, and confusing and inaccurate radio transmissions all contributed to needless casualties to U.S. troops and an unimaginable loss of civilian life. Bad surveillance and C2 are unacceptable. Army aviation forces deserve the best equipment and train-



National, theater, and task force assets must support assault and deep attack task forces.

ing that can be produced. Loss of C2 in the field is possible if the apparent ease of using satellites for over-the-hill transmissions lures us into relying completely on satellite communications. Unmanned aerial vehicle (UAV) communications relays can be reliable and should be available to aviation and to the whole Army.

Unattended ground sensors (UGS) could offer another means of enhancing Army aviation survivability by providing a continuous monitoring system for any area seeded with sensors.[7] Simulations have shown the value of a system of acoustic sensors in sets of three cueing tripod-mounted, forward-looking infrared that report automatically to an integrated, multisensor situation awareness system. While vehicles would be the primary targets, humans moving with equipment, such as MANPADS, could also be targeted. Helicopters at surveillance locations can place UGS; however, standoff placement by artillery, helicopter missiles, or tactical aircraft could improve Army aviation survivability.

Army Aviation Must Be Part of the JFACCs ATO

Even if the Army does all it can to improve the survivability of Army aviation forces, Army aviation will still need to survive within the joint arena. In that light, Army aviation must have the means to know all threats in its operating area, ways to avoid or destroy those threats in its path, and resources to orchestrate what has to be done. However, Army aviation and the Army must also face the fact that they do not own all the assets needed for the job and must demand the appropriate joint command assets be furnished. A joint solution is needed, and the necessary resources in other commands must be made available when deep operations are planned and conducted. The figure illustrates an air assault in progress.

To increase survivability when conducting deep attack or air assault missions, the attack task force (TF) should be placed in a cocoon that surrounds the forces with necessary support. The process would begin with the entry of a deep attack flight plan into the JFACC's ATO.

To increase survivability when conducting deep attack or air assault missions, the attack task force (TF) should be placed in a cocoon that surrounds

the forces with necessary support. The process would begin with the entry of a deep attack flight plan into the JFACC's ATO. This action should automatically generate a request for essential joint support capabilities, including a prearranged set of pretakeoff and execution data; coverage by a predesigned sensor suite and control elements that can provide real-time situation awareness; jamming by EA-6B and EC-130E/J, and dedicated suppression of enemy air defense (SEAD)/destruction of enemy air defense (DEAD) forces and artillery; ground sensor and UAV sensor coverage of critical areas; and onstation USAF tactical aircraft (TACAIR). Joint, coordinated planning and briefings among aircrews of the Air Force assets with TF helicopters and artillerymen should be standard procedure.

There has been reluctance to commit Army aviation assets to a joint ATO. For example, during Operation Allied Force in 1999, an aviation force was deployed to Albania with a large ground force contingent. Army Lieutenant General John W. Hendrix, commander, U.S. Army V Corps and TF Hawk, hesitated to allow Hawk helicopter missions to enter into the NATO ATO for Allied Force operations in Kosovo.

Joint system data should specify the air defense and ground force threat information necessary for conducting threat-avoidance flight route planning with the Aviation Mission Planning System and the necessary coordination and communication arrangements for air traffic control and mission control. As the mission is conducted, the mission helicopters should receive the composite threat data from national sensors and theater sensors such as the Joint Surveillance Target Attack Radar System (JSTARS), Airborne Warning and Control System (AWACS), airborne reconnaissance low-multifunctional (ARL-M), Rivet Joint, UAVs, and ground sensors. The TF should be under positive operational control of an air control element, such as AWACS or JSTARS, that can furnish real-time threat information and warnings, and ensure coordination with jammers, SEAD, and TACAIR. The goals are to ensure a seamless fit between the scout/attack mission and the national, Army, and Air Force situation awareness processes and to focus attack and protection resources on the TF attack mission.

Such joint efforts are not simply pie-in-the-sky prospects—they work. An Apache team operated successfully in a joint environment similar to the one just described at an Air Force-conducted Red Flag exercise on the firing ranges near Nellis Air Force Base, Nevada, in 2000. This exercise included Air Force and Navy fighters and support assets. After successfully navigating through a threat environment, an Apache acquired a target assigned by a joint control element, released a Hellfire missile, killed the target, and returned to home base. Similar successes have occurred in other joint exercises.

Despite this success, there has been reluctance to commit Army aviation assets to a joint ATO. For example, during Operation Allied Force in 1999, an aviation force was deployed to Albania with a large ground force contingent. Army Lieutenant General John W. Hendrix, commander, U.S. Army V Corps and TF Hawk, hesitated to allow Hawk helicopter missions to enter into the NATO ATO for Allied Force operations in Kosovo in March 1999. A final agreement allowed TF Hawk missions on the NATO ATO but only in a time window that prohibited other attack forces from entering the NATO ATO and included fixed-wing air support. It also stipulated that sole fire support would be by multiple-launch rocket systems and Army tactical missile systems located in Albania, both nonprecision fires that would have been unacceptable to NATO in the Kosovo situation.

Later, in a critique of TF Hawk at a NATO Reaction Force Air Staff Conference on JFACC issues, USAF Major General John R. Dallager, assistant chief of staff for operations and logistics, Supreme Headquarters, Europe, indicated: "Clearly the JFACC's authority must not infringe upon operational C2 relationships within and between national or service commands and other functional commands. But to ensure deconfliction of simultaneous missions and to minimize the risk of fratricide, all air operations within the [joint operating arena] must be closely coordinated by the JFACC through the ATO . . . process. This last point may be difficult to swallow for land and maritime commanders, but if air history teaches us anything, it is that air, the truly joint activity, needs to be coordinated centrally if we are to make efficient use of scarce resources and if we are to avoid blue-on-blue."[8]

You have to get there and stay alive to play in the game! Everyone appreciates the firepower, responsiveness, and agility of aviation, but they are set back by what it costs to get to war and survive once there. Army aviation requires too much cube to go to war. It must reduce its footprint by reduc-

ing its deployment weight and cubic footage. Once there, Army aviation must be able to overcome the threats to its assets during combat that deter what should be the Army's widespread advocacy for employing its considerable firepower and airlift capabilities. A corps commander wants to know that an aviation unit tasked to hold a flanking enemy force can live to do the job. A division commander wants to know that he can rely on an air assault aviation force to stay alive when he orders his men to fly into combat.

The good news is that, on this score, operations in Afghanistan during 2001-2002 have boosted helicopter aviation in all services. It is a perfect example of successfully operating in a SAM and MANPADS environment. Initially, ground forces moved in by airdrops from fixed-wing aircraft and moved out by helicopter pickups. Later, a small, but well-armed, contingent of U.S. Marines was successfully inserted by helicopter lift to take and hold an airfield. Subsequent forces have been flown in on C-130 fixed-wing aircraft. The operation occurred in an area where major air defense assets had been eliminated but that was still partially occupied by Taliban opposition forces known for their prowess in shooting down Soviet helicopters in the 1980s with hand-held Stingers and Russian rocket-propelled grenades.

One of the most positive events in Afghanistan was UAV success. Predator UAVs' surveillance apparently furnished a window on much of the Taliban's movements and destinations, enough to target vehicles, buildings, caves, and masses of soldiers. The inauguration of unmanned combat aerial vehicles (UCAVs) — Predators that fired Hellfire missiles at targets — is a welcomed advancement of UAV capabilities and an indicator of what Army aviation may expect to employ in the future. With aviation's success in the manned/unmanned teaming testing, in which Apache aircrews have controlled a UAV and its sensors while flying a simulated combat mission, aviation should incorporate UAVs and UCAVs in attack battalions.[9] Further, because of the high exposure of fixed-wing Predators, developing and acquiring rotor-wing UAVs that would better meld into the attack helicopter nap-of-the-earth mode of operations should be a high priority.[10] UAV surveillance should provide a significant increase in survivability to aviation operations.

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Army aviation is commencing a difficult period of transformation along with the whole Army. It has the opportunity to shape flying units to meet a variety of adversaries it may face at home and in many parts of the world. It is imperative that improved deployability and survivability are paramount factors in this shaping. Without them, invitations from joint commanders to join the team will be slow coming. ***MR***

NOTES

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5. Mark Bowden, *Black Hawk Down: A Story of Modern War* (New York: Atlantic Monthly Press, 1999).
6. Glenn W. Goodman, Jr., "Counter-SAM Tactics: After 30 Years, Shoulder-Fired IR Missiles Still A Threat to US Aircraft," *Armed Forces Journal International* (November 2001), 52-55.
7. John D. Pinder, Gail Halverson, and Randall Bowish, *Evaluating the Military Utility of Ground-Based Acoustic Sensor Networks*, AB-169-A/OSD (Santa Monica, CA: RAND Corporation, September 1997); and John Matsumura et al., *Rapid Force Projection Technologies: Assessing the Performance of Advanced Ground Sensors* (Santa Monica, CA: RAND Corporation, 2000).
8. For more on Task Force Hawk and Operation Allied Force, see Benjamin S. Lambeth, "Task Force Hawk," *NATO's Air War for Kosovo: A Strategic and Operational Assessment*, MR-1365-AF (Santa Monica, CA: RAND Corporation, 2001), 147-57.
9. Steven MacWillie, Aviation Battle Lab, *Helicopter/UAV Integrated Operations*, Briefing, Fort Rucker, Alabama, 6 December 2000.
10. For example, an A160 unmanned rotorcraft with a hingeless rigid in-plane rotor. See Arthur Morrish, deputy director, Tactical Technologies Office, Defense Advanced Research Projects Agency, Hummingbird A160 Briefing, October 2001.

Colonel Lewis M. Jamison, U.S. Air Force, Retired, is a senior military analyst in Santa Monica, California. He received a B.A. from the U.S. Military Academy and an M.B.A from George Washington University and attended the National War College. He served in a number of air defense and tactical fighter units, including plans officer, Headquarters, U.S. Air Force Deputy for Operations, 8th Tactical Fighter Wing, Ubon, Thailand; chief, Fighter Division, 7th Air Force, Saigon; chief, Operational Readiness Team, U.S. Air Force, Europe; and director, Planning, J4 Joint Staff.

Shaping the Information Environment

Major Glenn A. Tolle, U.S. Army

Information is the oxygen of the modern age. It seeps through the walls topped by barbed wire, it wafts across the electrified borders.
—Ronald Reagan, London, 14 June 1989

INFORMATION superiority (IS) is not a new concept, but the means by which the interim brigade combat team (IBCT) achieves it is. The hub of the IBCT IS effort is the information operations (IO) section, a unique assembly of disciplines designed to shape the IBCT information environment via primarily nonlethal means.[1] To understand the section's efforts to leverage the information environment, the dynamics of that information and the effects of image and perception must be considered.

The information environment is one of six dimensions of the Army's operational environment.[2] This environment is pervasive and dynamic, and is influenced by factors well beyond the IBCT's doctrinal 50x50-kilometer footprint.[3] These dynamics can be viewed in terms of Newton's first and third Laws of Motion. The first law is a body at rest tends to remain at rest or a body in motion tends to remain in motion at a constant speed in a straight line unless acted on by an outside force. The third law states that for every action there is an equal and opposite reaction.[4]

As shown in the cognitive hierarchy figure, information rises above mere data in that it contains data arrayed in a meaningful message, always with battlefield implications.[5] Information possesses weight, and when set in motion or ignored in an organization by digital or analog means, it exhibits characteristics of inertia and momentum. The quality of the information itself is subject to entropy, the degradation of meaning, analogous to the dissipation of energy expressed in the second law of thermodynamics.[6]

The IO section monitors image projection and perception management, and advises the commander on the best approach to marketing the IBCT to the host nation decisionmakers. There are a variety of augmentation tools the IO section plans for, integrates, and monitors available for perception management, particularly in SASO.

The IO Sections Role

Information tends to remain at rest, perhaps in someone's inbox, until acted on by an external force. Information, especially bad news, remains in motion until acted on by an external, superior force such as updated information. The commander's critical information requirements (CCIR) are the hard standards in determining what information deserves momentum and what information should lie inert.

The brigade executive officer (XO) plays a key role in this dynamic, identifying and correcting information inertia within the staff and ensuring the system operates effectively and efficiently with little wasted energy. Giving momentum to anything that is not CCIR contributes to the organization's overall entropy and ultimately impacts on the quality and timeliness of the commander's decisions. The IO section tailors the efforts of its various disciplines to address CCIR and assists the XO in squelching irrelevant data.

The whole idea of momentum implies that information has weight. The IO section ensures the information's content (mass/weight) has the intended impact on the target audience. This is not merely information management but verifying the information's accuracy and its relevancy in terms

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of CCIR. By synchronizing the efforts of the civil affairs (CA) teams, tactical psychological operations (PSYOP) detachments, public affairs detachments (PADs), and combat camera crews with intelligence, surveillance, and reconnaissance (ISR) assets in the reconnaissance, surveillance, and target acquisition (RSTA), information is weighted properly and contributes to the IBCT's tactical momentum.

Entropy is present in the information environment in the form of irrelevant or inaccurate information, which, in turn, consumes bandwidth on the network; lack of common doctrinal terminology; network interruptions; and stovepiping within the staff. Entropy reduces the amount of energy available to do work and reduces the clarity of the common operating picture. It can be reduced—but never entirely eliminated—by training, detailed standing operating procedures, redundant communications, and net discipline. It is important to note that reducing entropy in one system contributes to increasing entropy in an opposing system. The offensive side of IO, such as electronic warfare, physical destruction, and PSYOP, can be brought to bear on this inverse relationship.

Every action (message) has an equal and opposite reaction (effect). Information produces effects, most of which can be anticipated and exploited. The IO section leverages the information's impact on the host nation and enemy force, and synchronizes this impact with the commander's envisioned end state. Anticipating these effects enables the staff to chan-nel its energy in the right direction and posture the IBCT for success. Information synthesized within the tactical operations center (TOC) has kinetic and nonkinetic implications that an astute staff will anticipate and control. Explaining his success as the highest scoring hockey player in National Hockey League history, Wayne Gretzky said, "I don't skate to where the puck is, I skate to where it's going to be."

Perception Management and Credibility

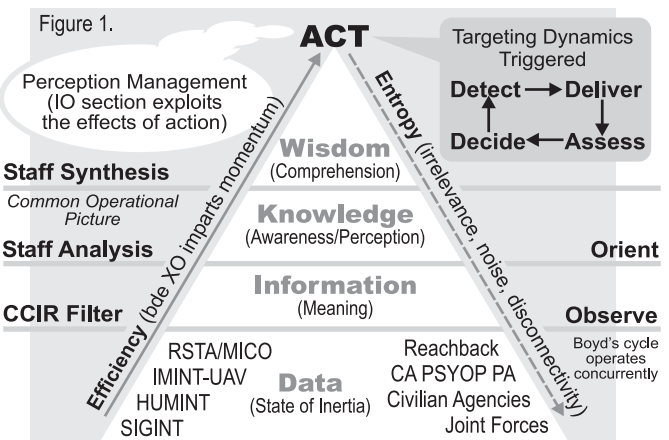
Credibility is the coin of the realm in stability and support operations (SASO) and the desired aftereffect of shaping the information environment. Information is only as good as its perceived source, and when credibility disappears, so does legitimacy and civil-military cooperation. Image and credibility go hand in hand, and neither can be affected without impacting the other. The information environment cannot be fully controlled or IS achieved without proper emphasis on perception management.

The IO section monitors image projection and perception management, and advises the commander on the best approach to marketing the IBCT to the host nation decisionmakers. There are a variety of augmentation tools the IO section plans for, integrates, and monitors available for perception management, particularly in SASO.

PSYOP teams have perhaps the most overt impact on both the enemy and the host nation via images and messages approved by the theater commander. By means of a well-thought-out public safety theme, PSYOP teams can employ useful, accurate public service broadcasts that gain civilian confidence and cooperation such as warning the local population of the landmine threat and encouraging safety around the U.S. military on public roads. The IO section would capitalize on this particular angle of attack by reinforcing PSYOP efforts with public affairs and combat camera involvement. Caution should be exercised when tailoring information packages for local villages, however. PSYOP and human intelligence (HUMINT) should not be used as mix-and-match information assets with CA. Overt association with PSYOP's behavior-influencing products could undermine CAs' credibility with local leaders.

CA, in its role as an interagency coordinator, interacts with a host of aid or-

Figure 1.



An IBCT adaptation of the cognitive hierarchy depicted in FM 100-6. The physics of the information environment affect the commander's decision cycle. The IO section works this dynamic to affect perception management.

ganizations typically operating under the umbrella of the United Nations High Commissioner for Refugees (UNHCR). Information generated from this relationship contributes to the IBCT common operating picture, lending a view of the civilian population that is not possible with tactical units alone. Interaction with aid organizations, such as world food programs and the International Committee of Red Cross, enables CA to network with formal and informal leadership within the host nation. CA work in Gnjilane, Kosovo, during the harvest summit of August 2000 is a fine example of the high-profile nature of host nation interaction. When handled successfully, as it was in Kosovo, U.S. forces are perceived as equitable, impartial distributors of humanitarian aid.

The PAD is second only to PSYOP in its influence on perception management. The PAD ensures that the Army story is being told accurately and that the command speaks with one voice to international media. This fosters the desired perception of unity, cohesion, and resolve. The PAD also serves as a buffer when negative information arises from an operation. The IO section can reinforce positive images and combat the effects of negative information using PSYOP and CA.

Combat camera personnel not only support the PAD effort but also record collateral damage to reinforce the CA team's assessments that it forwards to the G5. These assessments are shared with representatives for the UNHCR, who use the information to determine humanitarian aid distribution. Efficient and equitable humanitarian aid distribution affects the population's perception of the IBCT.

IS implies firm control of the images the IBCT projects. Perception management is a command responsibility, however, and not the sole domain of the IO section or its augmentees. In the information age, one bit of news footage can traverse time and space in moments and undermine months of hard work.[7] Discipline and cultural sensitivity training

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are paramount in perception management. Home station training in cultural sensitivity can improve perception management as well.

The pervasive and dynamic natures of the information environment call for special vigilance from all staff elements. Understanding the dynamics of this environment sensitizes the staff to the data flowing through its sections and to how it impacts the commander's decision cycle. The brigade XO, with his macro view of the information processes in the TOC, ensures that inertia and entropy are reduced to irrelevant levels while information contributing to CCIR receives adequate momentum.

Images and perceptions—everything that a host nation or enemy sees, hears, or reads—influence the dynamics of the information environment and figure prominently in achieving IS. IS cannot be achieved without controlling how the host nation or enemy perceives U.S. forces. Perceptions can be managed or altered, and is IO section's mandate.[8] Home station training, with particular emphasis on cultural sensitivity and interaction with the media, can pay big dividends at a time when entire operations can change dramatically over a few minutes of bad press. Although the IO section is designed to bring special augmentation to bear on perception management, every member of the command is responsible for how the IBCT is perceived. ***MR***

NOTES

1. U.S. Army Field Manual (FM) 3-13, *Information Operations*, Combined Arms Doctrine Directorate, Fort Leavenworth, Kansas, Doctrine Review and Approval Group edition, November 2001, 1-51. Twelve elements of IO are currently identified with two related activities, public affairs and civil affairs.
2. FM 3-0, *Operations* (Washington, DC: U.S. Government Printing Office [GPO], 14 June 2001), 1-24.
3. IBCT Organizational and Operational Concept, 30 June 2000, chapter 1, Executive Summary, <www.lewis.army.mil/transformation>.
4. *The Columbia Encyclopedia*, 6th Ed., s.v. Motion. Reasoning by analogy has its limitations, but it serves to underscore the information dynamics at work in and around the IBCT TOC.
5. FM 100-6, *Information Operations* (Washington, DC: GPO, August 1996), figure 2-1, depicts this cognitive hierarchy.
6. Claude E. Shannon, Bell Laboratories, expressed the idea of information entropy in his seminal 1948 paper, "A Mathematical Theory of Communication." The late Shannon is considered the father of the binary system.
7. The news of a soldier accused of raping and murdering an 11-year-old Albanian girl detracted significantly from thousands of soldiers' efforts who were working in Kosovo, <www.cvv.com/2000/WORLD/europe/01/17/kosovo.soldier.02>.
8. Samuel P. Huntington, *Clash of Civilizations* (New York, NY: Simon and Schuster, November 1996). The wider the cultural rift, the more difficult it is to alter the baseline perception of U.S. forces.

Major Glenn A. Tolle, U.S. Army, is the civil affairs officer, Information Operations Section, 3d Brigade (IBCT), 2d Infantry Division, Fort Lewis, Washington. He received a B.S. from Regents College. He has served in various command and staff positions, including civil affairs team leader, C Company, 3d Battalion, 8th Cavalry Regiment, 1st Cavalry Division, Fort Hood, Texas; commander, A Company, 3d Battalion, 8th Cavalry Regiment, 1st Cavalry Division, Fort Hood; and S1, 3d Battalion, 73d Armor Division, Fort Bragg, North Carolina.

The Role of Retrans in the IBCT

Captain Philip A. Cotter, U.S. Army

CREATING THE INTERIM brigade combat team (IBCT) increased the use of digital computer systems. These systems are designed to speed information flow, assist the decisionmaking process, and create situational awareness of both friendly and enemy units. Battalion and brigade tactical operations centers (TOCs) have been the focus of digitization along with supporting equipment throughout battalions and the brigade signal company. The computer systems within the TOCs replace paper maps and other products the TOC staff uses. The TOC staff focuses on the Maneuver Control System (MCS) the S3 uses to track friendly and enemy positions. The MCS is fed information from other TOC computer systems such as the All-Source Analysis System the S2 uses to supply enemy locations; the Combat Service Support Control System the S1 and S4 use to track main supply routes and logistics and personnel statuses; the Advanced Field Artillery Tactical Data System; the Force XXI Battlefield Control Brigade and Below that provides friendly unit positions; and the tactical Internet local area network manager the S6 uses to ensure all systems are connected to transmit large amounts of information.

To permit the critical information flow from company to battalion and battalion to brigade, radio systems capable of transmitting data were needed. Those radio systems are the Enhanced Position Location Reporting System (EPLRS) radio, used for company to battalion data, and the near-term digital radio (NTDR) for battalion to brigade data flow. These radios are located in retransmission (retrans) vehicles in the infantry; reconnaissance, surveillance, and target acquisition units; field artillery battalions; and the brigade signal company.

Traditionally, retrans vehicles act as a relay, providing additional range for frequency modulation (FM) communications. However, because of the tremendous amount of information, these vehicles must also relay signals for two additional data networks. The first network that uses the EPLRS radio transmits data from company to battalion. The second network uses the NTDR to pass digital information laterally and higher from the TOCs, thus enhancing the timeliness of the decisionmaking process through greater situational awareness and collective planning.

By using battalion retrans assets to support the brigade digital network, battalions risk being unable to support the FM communications needed during the close fight when digital traffic is at its lowest. The primary reason for this is that the location providing the vital digital link between battalion and brigade may not be a suitable location for supporting FM communications down to company level during the fight.

Digital networks require retrans to relay digital information, rendering the original mission of FM communications a third concern when performing mission planning. Without digital information, IBCT TOCs may as well be any other "paper and pencil" TOC; therefore, engineering the digital network becomes the first concern. The NTDR is the key digital radio system that has a planning range of only 10 to 12 kilometers (km) with line of sight. Without a functional NTDR, the lateral and higher digital coordination for collaborative planning, orders dissemination, and friendly/enemy position reports are useless, and situational awareness reverts to analog and FM reporting.

Second, the retrans location must be in a position that supports communication between company and

battalion EPLRS radio systems. With a planning range of approximately 20 km, positioning is slightly more forgiving than the NTDR; however, it is still key to ensuring the bottom-up data flow from company to battalion. Finally, the retrans needs to support its original FM mission. During a fight, FM communication between a company and battalion is still the primary method for information flow; however, providing FM coverage to the company becomes difficult because of its initial placement to support digital systems.

Collaboration between the IBCT S6s and the signal company becomes increasingly important. The S6s must ensure that the retrans organic to their battalions can meet the battalions' communications needs. At the same time, because of additional missions, the S6s must be aware of all brigade requirements for digital connectivity from TOC to TOC. Lessons learned from the brigade digital warfighter exercise held at Fort Lewis, Washington, in September 2001 showed battalion and brigade requirements could conflict due to the lack of retrans assets. By using battalion retrans assets to support the brigade digital network, battalions risk being unable to support the FM communications needed during the close fight when digital traffic is at its lowest. The primary reason for this is that the location providing the vital digital link between battalion and brigade may not be a suitable location for supporting FM communications down to company level during the fight. It then becomes necessary to move the retrans or request an additional retrans from within the brigade for support.

Neither solution is optimal as moving severs the digital link and additional retrans may take too long to arrive to affect the fight or not be available. As such, it became necessary during the exercise to use a third improvised retrans to support battalion FM requirements while the two battalion-authorized retrans were supporting the digital network. Because of its location, the retrans was not in the proper position to conduct FM retrans operations down to company level.

The importance of retrans assets to the brigade is paramount for successful digital and FM operations. The security of the retrans became an issue early during the digital warfighter exercise when key retrans sites were identified. Had some of the retrans sites been eliminated during the conflict, digital and FM communications would have suffered greatly and possibly precluded using the TOC computer systems for collaboration. It was necessary to devote an infantry squad to protect the retrans because each retrans was authorized only two soldiers to operate the equipment and attempt to maintain some security.

US Army

A retrans site at an IBCT digital warfighter exercise, Fort Lewis, Washington.

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The role of retrans in the IBCT is still to provide the critical relay needed to support communications. However, since digital systems must be supported, the mission has become increasingly difficult. Because both digital and FM support are provided, retrans systems have become critical communications assets in the IBCT that require additional security measures to protect them. Overall, network planning and placement of the retrans systems require close scrutiny during development to ensure there are enough assets available to support FM communications during the fight and to support digital transmission at all times if the IBCT is to remain digital on the battlefield. ***MR***

Captain Philip J. Cotter, U.S. Army, is the S6, 5th Battalion, 20th Infantry Division, Fort Lewis, Washington. He received a B.S. from Thomas Edison State College. He previously served as information management officer, platoon leader, and S1, 307th Signal Battalion, Camp Carroll, Korea.

The Reconnaissance Squadron and ISR Operations

Major Michael C. Kasales, U.S. Army

To guess at the intention of the enemy; to divine his opinion of yourself; to hide from both your intentions and opinions; to mislead him by feigned manoeuvres; to invoke ruses, as well as digested schemes, so as to fight under the best conditions—this is and will always be the art of war.

—Napoleon

AS THE U.S. ARMY continues to transform and until the Objective Force is finally realized, the Army has made great efforts to field an interim force—the interim brigade combat team (IBCT). This Transformation force will lead the Army into the future. The IBCT is a force-projection force that can rapidly deploy anywhere in the world to protect U.S. interests or serve the needs of the National Command Authority and regional commanders in chief. Designed specifically to conduct small-scale contingency operations in complex terrain against asymmetric tactics, the IBCT will be capable of responding to the country's needs.

The IBCT is a unique and lethal combined arms organization comprised of three infantry battalions, a reconnaissance (recce) squadron, a field artillery battalion, a brigade support battalion, an antitank company, an engineer company, a military intelligence company, and various other combat support elements. But, what truly makes the IBCT a lethal and effective combat force is its ability to achieve information superiority. With all elements in the IBCT connected via the Army Battle Command System (ABCS) and Force XXI Battle Command Brigade and Below (FBCB2), every echelon can gain and maintain situational awareness (SA), and can quickly pass and receive intelligence information and mission orders.

There are several unique aspects of the IBCT, but the most important is its ability to gain and maintain situational understanding of the battlefield. The primary means of achieving situational understanding is through intelligence, surveillance, and reconnaissance (ISR) operations. ISR is defined as "the integration and synchronization of all battlefield operating systems to collect and process information about the enemy and environment that produces relevant information to facilitate the commander's decisionmaking."[1] By achieving situational understanding, the brigade commander can best employ lethal and nonlethal effects to defeat an enemy force.

Emerging doctrine addresses an additional element of combat power—information. The IBCT's ability to gain information superiority and maintain information dominance will be critical to future military operations in an increasingly complex battlespace. In the future, the IBCT will conduct operations across the spectrum of conflict from major theater war to small-scale contingency operations to peacetime military engagements—facing adversaries that will range from conventional military forces, to paramilitary and guerrilla forces, to terrorists and organized crime groups. Additionally, as these threats attempt to gain an advantage over U.S. forces, the enemy will seek to attack U.S. forces using unconventional and asymmetric attacks while operating in varying types of terrain, including not only open, rolling terrain but also urban areas and severely restricted mountainous and heavily wooded terrain.

To ensure success on the future battlefield, commanders must achieve information superiority, defined as "the operational advantage derived from the ability to collect, process, and disseminate an uninterrupted flow of information while exploiting or denying an adversary's ability to do the same."[2] The ability to rapidly collect, process, and disseminate information enhances a commander's ability to make better military decisions,

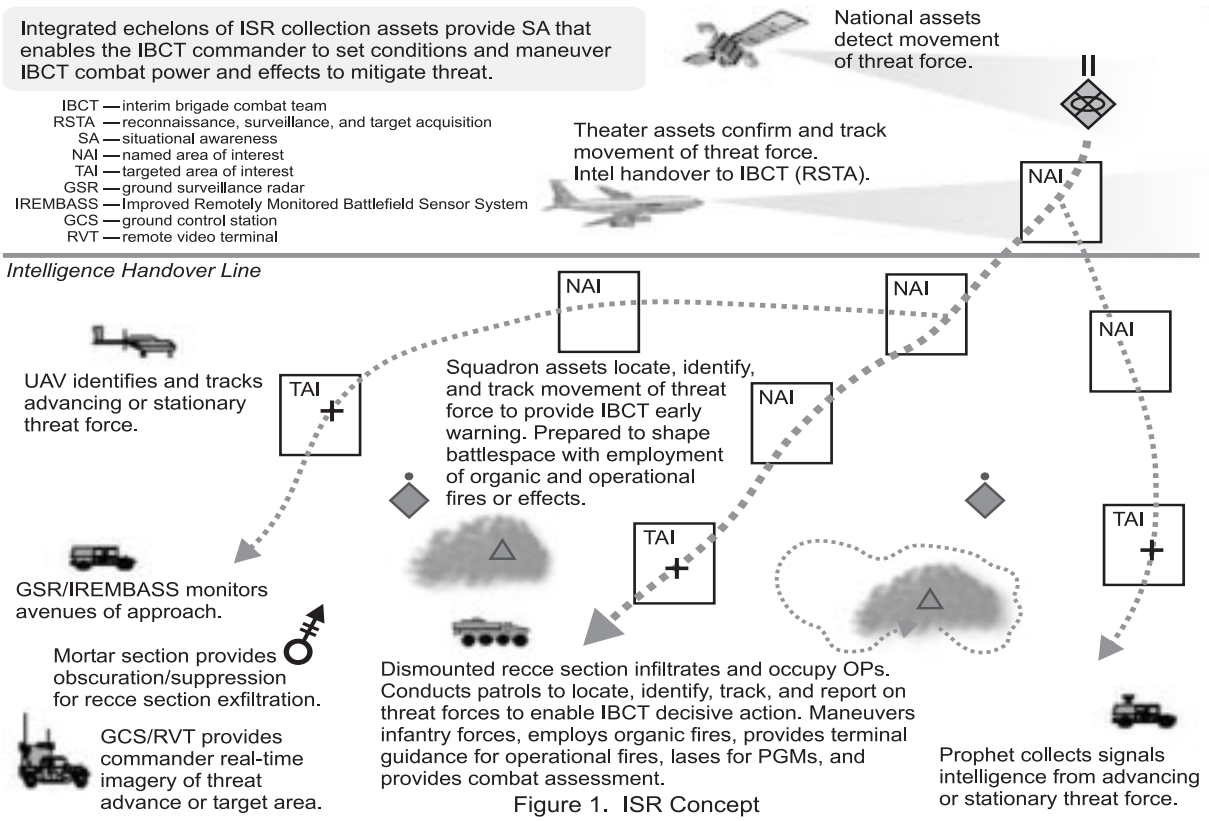

Figure 1. ISR Concept

and command and control his unit.

Each subordinate element in the IBCT contributes to ISR operations. Intelligence is "(1) the product resulting from the collection, integration, analysis, evaluation, and interpretation of available information concerning the threat or environment, or (2) information and knowledge about an adversary obtained through observation, investigation, analysis, or understanding."[3] The term surveillance is defined as "the systematic observation of aerospace, surface, or subsurface areas, places, persons, or things, by visual, aural, electronic, photographic, or other means."[4] Reconnaissance is defined as "a mission undertaken to obtain, by visual observation or other detection methods, information about the activities and resources of an enemy or potential enemy or to secure data concerning the meteorological, hydrographic, or geographic characteristics of a particular area."[5]

Information can be collected by any of the brigade's assets and disseminated through ABCS and FBCB2. However, the subordinate unit that is primarily responsible for ISR operations is the IBCT's recce squadron, which has a variety of information-collection assets that gives the brigade a robust reconnaissance, surveillance, and target acquisition capability. The squadron can provide intelligence information through various means such as human intelligence, signals intelligence, imagery intelligence, measurement and signature intelligence, and the ability to access intelligence information from theater or higher intelligence sources. Collectively, the squadron's assets are fully capable of providing the IBCT with timely and accurate threat and environment information. This is a very important point to remember when discussing the squadron's capabilities; the squadron was designed to operate as a system of systems. Individually, each of the squadron's assets are effective in collecting information, but the synergy achieved with each of these assets working in concert cannot be overstated.

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Throughout brigade operations, information is provided to all IBCT units through ABCS and

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FBCB2. These two systems work in concert to provide continuous friendly (Blue) and enemy (Red) SA as well as to facilitate detailed coordination and more rapid dissemination of information and mission orders. When intelligence information is reported via these two systems, it is not as important to know who reported the information as it is to know that the information is timely and accurate. Having this confidence and trust in the information reported is essential to avoid micromanaging individual assets or systems. It is the squadron commander's responsibility to arrange collection assets and activities in time, space, and purpose to provide timely and accurate reports to the brigade commander.

Previously, there were several methods for employing recce forces. The commander had to understand which method he would use to influence the planning process. Additionally, subordinate recce forces had to understand which method the commander preferred because this drove the amount of planning and preparation required to execute the intelligence-collection operation. This understanding also provided insight into how the collected intelligence information would influence the overall mission execution.

The first method of employing ISR forces is reconnaissance push. This method calls for recce forces to be deployed early in the planning process. The brigade staff uses the intelligence information collected to develop the plan. This technique requires the staff to develop facts and assumptions on the enemy early enough to focus the recce effort. These facts and assumptions are generally based on a predictive analysis of the enemy and a thorough intelligence preparation of the battlefield (IPB). As recce forces confirm or deny facts and assumptions, this intelligence information is reported back to the staff to complete the plan. Reconnaissance push requires a detailed intelligence-collection plan to be developed before planning the main body's mission, and the intelligence information must be gathered and reported in time to influence the planning process.

The second method of employing recce forces is command push. This method is similar to reconnaissance push as collected intelligence information is used to develop the main body's plan. The difference calls for the brigade staff to develop several detailed main body courses of action (COAs) before deploying reconnaissance forces. Recce forces are then deployed to gather detailed information on enemy strengths and weaknesses. The commander uses the intelligence information collected to select the appropriate COA, massing his strengths against enemy weaknesses.

The third method is reconnaissance pull. This method also calls for recce forces to identify enemy weaknesses so the main body can exploit them. The staff develops a flexible plan, based on several possible COAs, driven by the commander's intent. To execute reconnaissance pull, the commander must ensure that all subordinates understand his intent for the operation because this type of operation calls for decentralized, but synchronized and integrated, execution. The plan allows for maximum flexibility as recce forces precede and continually place the main body in a position of advantage against identified

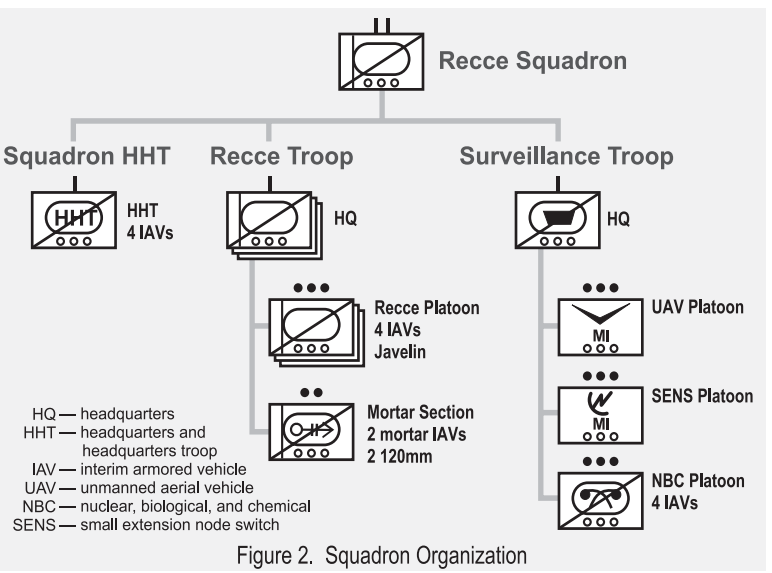


Figure 2. Squadron Organization

enemy weaknesses. The commander uses a series of decision points based on the intelligence read to maneuver his forces.

With the development of the IBCT, and by leveraging computer and communications technology, a new method of employing the squadron has emerged. This new method, ISR push, combines the method of employing recce forces similar to reconnaissance push with a relationship between the squadron and main body forces similar to reconnaissance pull. More specifically, the squadron will be employed very early in an operation to collect the relevant information needed to develop a detailed plan for the main body. However, due to the enhanced connectivity ABCS and advanced communication systems provide, the squadron will report near-real-time information to provide a common operating picture and increased SA to the brigade. This information will provide the IBCT commander with the intelligence information needed to gain positional advantage over the enemy, allowing him to refine a current plan or develop a completely new plan based on changing battlefield conditions.

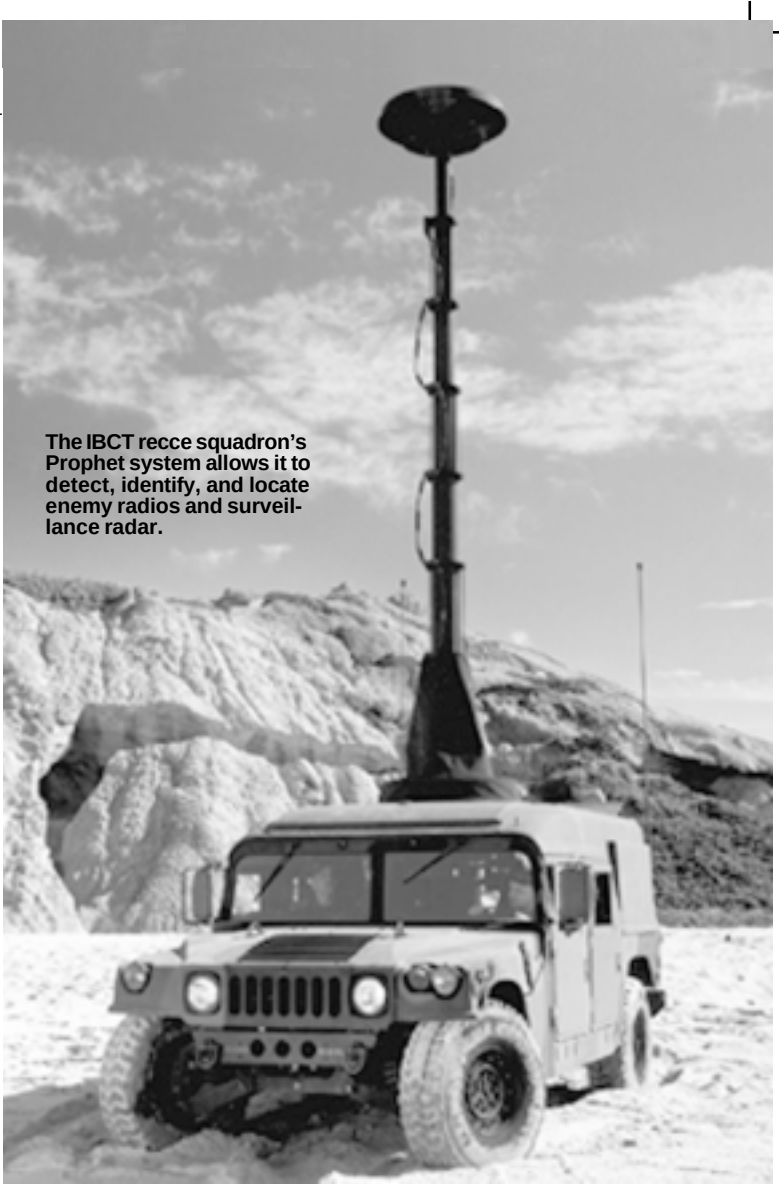
To achieve information superiority in full-spectrum operations, commanders and their staffs plan and direct three specific types of operations or functions: ISR operations, information management, and information operations. The IBCT recce squadron specifically contributes to ISR in full-spectrum operations by—

- Conducting recce to provide relevant information to the commander to develop and maintain a comprehensive picture of the threat and monitor likely threat COAs.
- Providing security to deny the threat information about friendly forces.
- Contributing to battlefield deception to influence the opposing force commander's perceptions, plan, and actions to gain the initiative.
- Providing timely and accurate information to deny the threat the ability to deceive friendly forces.
- Collecting information and interacting with neutral forces and noncombatants to discern their support for friendly forces' missions and activities.

The squadron provides a variety of intelligence information to the IBCT commander and subordinate battalions that enables successful combat operations. The squadron's unique capabilities are designed to work in concert with the unique capability of one asset offsetting the limitations of other assets. The squadron's assets follow:

- Recce sections. The squadron can employ up to 18 sections of scouts on the battlefield to observe designated areas and collect intelligence information. These sections not only collect conventionally understood human intelligence but also collect detailed information on the local populace through embedded counterintelligence agents.
- Ground surveillance radar and remote battlefield sensors. These assets provide the ability to collect and report measurement and signature intelligence.
- Radio intercept. The organic Prophet signals

Titan Delfin Corporation



The IBCT recce squadron's Prophet system allows it to detect, identify, and locate enemy radios and surveillance radar.

During the planning process, specific information requirements (SIR) needed to answer the commander's priority intelligence requirements (PIR) are also developed. The planning results in a scheme of maneuver to employ and focus ISR assets on targeted areas of interest and named areas of interest, and a scheme for employing lethal and nonlethal effects.

intelligence and electronic warfare system allows the squadron to collect and report signals intelligence.

- Tactical unmanned aerial vehicle (TUAV). The Shadow TUAV enables the squadron to collect and report imagery intelligence.
- Fox nuclear, biological, and chemical (NBC) reconnaissance vehicle. This system allows the squadron to collect and report NBC presence on the battlefield.

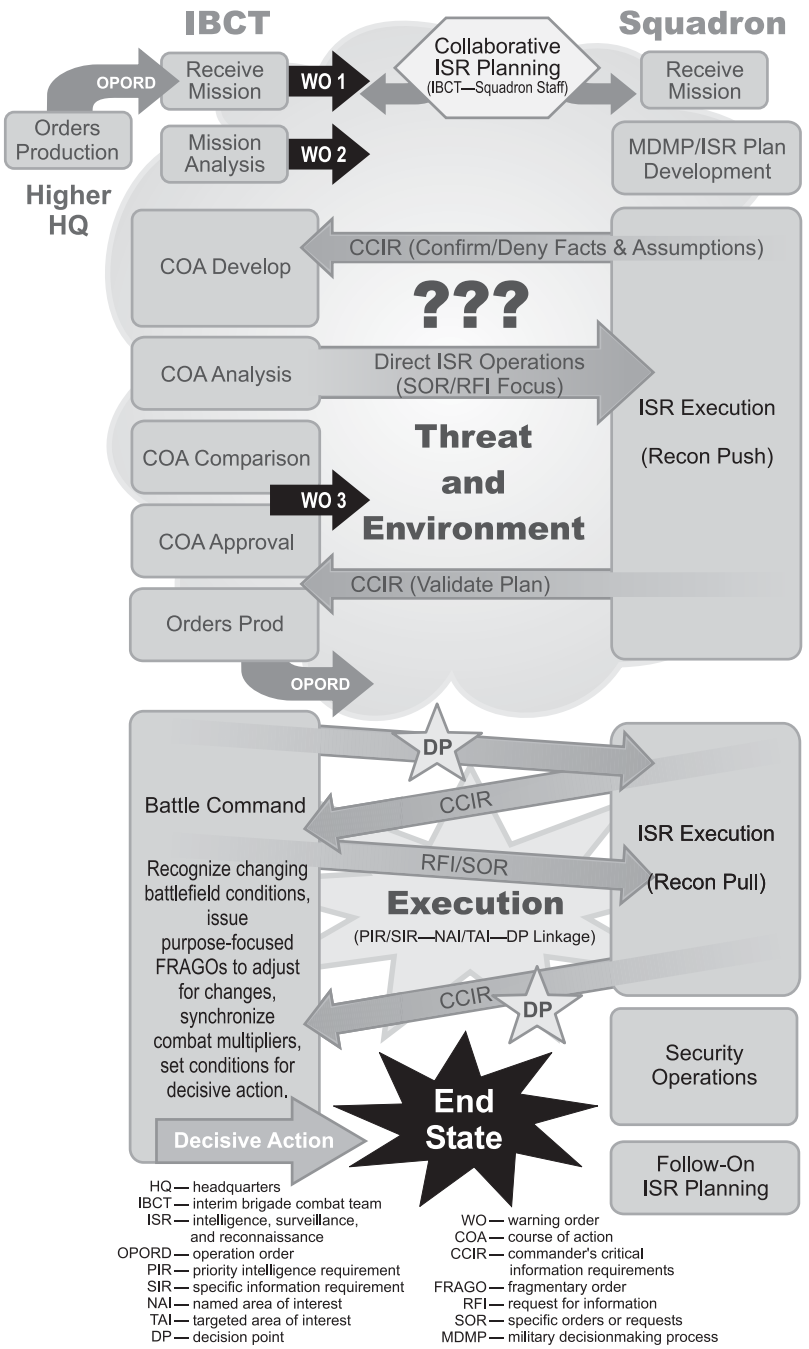


Figure 3. ISR Planning/Operations Within the IBCT—ISR Push

At the squadron level, ISR planning is conducted to provide mission orders to the squadron's subordinate troops. This includes detailed information on the likely locations, disposition, and COAs of threat forces and specific information about the operational environment and terrain. During the planning process, specific information requirements (SIR) needed to answer the commander's priority intelligence requirements (PIR) are also developed. The planning results in a scheme of maneuver to employ and focus ISR assets on targeted areas of interest (TAIs) and named areas of interest (NAIs), and a scheme for employing lethal and nonlethal effects. The planning also ensures that an effective communications architecture is established and reporting requirements are defined to support the ISR operation. Several keys to successful ISR planning follow:

- A clear commander's intent and defined PIR.
- Being adept at conducting IPB.
- Being proficient at determining likely threat actions through predictive analysis.
- Developing threat situational and event templates based on predictive analysis.
- Issuing a well-planned and coordinated ISR collection plan.
- Conducting a thorough ISR rehearsal.
- Deploying ISR forces early enough to infiltrate and execute the ISR operation.

The squadron develops the ISR collection plan based on three requirements: intelligence acquisition tasks from the higher headquarters' collection plan or tasks to subordinate units, internally driven PIR based on the squadron commander's information requirements, and requests for information from subordinate troops. The squadron staff then develops the ISR plan and provides a copy to the brigade for the S2 and ISR integration team to monitor and direct collection activities. The collaborative planning tools embedded in ABCS will maximize the squadron staff's ability to conduct parallel ISR planning with the IBCT staff.

The squadron's reach capability, using Trojan Spirit, can provide the squadron commander and staff with additional information they will need to plan the operation. However, close coordination with

the brigade staff is required to ensure that valuable reach bandwidth is not consumed by requesting redundant intelligence products. The bottom line is that the squadron staff can begin detailed ISR planning based solely on clear guidance from the IBCT commander and an understanding of the commander's intelligence requirements. Developing the ISR collection plan early allows the squadron additional time to deploy into the rear area of operations (AO).

The recce squadron staff, in close coordination with the IBCT staff, plans ISR operations to assign appropriate intelligence-collection tasks to subordinate squadron assets. These assets develop information that satisfies the intelligence requirements the commander has established. ISR planning, at both the squadron and brigade levels, is conducted for several purposes. The brigade must clearly articulate the information requirements the IBCT commander needs to make decisions to maneuver the brigade or employ effects. The plan also provides the framework and integration of combat multipliers for the squadron to prosecute critical targets with both lethal and nonlethal effects.

The collaborative planning tools that are part of the maneuver control system and FBCB2's mission planning message function will greatly enhance parallel ISR planning. As information is developed at the brigade level, it can quickly be sent to the squadron staff so it can begin planning at its level. The messaging and whiteboard functions allow brigade- and squadron-level staff officers to work on mission requirements and planning considerations in a near-real-time environment while being physically separated by extended distances. The same messaging functions, the SunForum whiteboard, and videoteleconferencing functions allow the squadron commander and staff to quickly receive the IBCT commander's guidance and intent. These functions also facilitate the staff's ability to integrate and synchronize ISR assets and combat multipliers. As these collaborative planning tools are relatively new, both the IBCT staff and the squadron staff must develop an effective standing operating procedure (SOP) that outlines which tools will be used for planning, how the collaborative tools are organized to facilitate sharing information, and what types of orders will be produced using these tools.

It may no longer be necessary to develop a complete five-paragraph operation order for each ISR operation, but it is critical that the collaborative planning tools allow the staffs to more quickly develop specifically tailored orders that include only the essential information for mission preparation and execution. These planning tools also allow the staff to more rapidly produce detailed fragmentary orders that the squadron can use to execute ISR operations. However, the SOP developed must be thoroughly developed and personnel fully trained for these planning tools to enhance the staff's ability to plan an operation in a shorter time.

The squadron will be employed very early in an operation to collect the relevant information needed to develop a detailed plan for the main body. However, due to the enhanced connectivity ABCS and advanced communication systems provide, the squadron will report near-real-time information to provide a common operating picture and increased SA to the brigade.

After receiving the commander's guidance and intent for the ISR operation, the first step in ISR planning is conducting IPB. The S2 and the ISR integration team should maximize reach capabilities to gather intelligence products to assist in completing the initial steps of the IPB. The most useful IPB product needed for successful ISR planning is a threat event template. The threat event template should depict where threat activity will occur, in relationship to friendly activities, in time and space. The information needed to develop this template is derived from predictive analysis—the process of analyzing and integrating known facts about the threat to determine the threat's likely actions. Intelligence information to support predictive analysis comes from a variety of sources and should be accessible through the joint common ABCS database.

In an immature theater, where little information may be known about the threat, the commander and S2 must make an educated guess on the likely actions the threat will take based on the current situation. Once developed, the threat event template drives the ISR collection plan. Likely threat locations or avenues of approach now become the NAIs or TAIs on which ISR forces focus their reconnaissance and surveillance. SIR provide ISR forces with the exact information, such as threat composition, disposition, and likely activities, they are to identify and report on.

On the future battlefield, which will be characterized as nonlinear and noncontiguous, ISR operations

The most useful IPB product needed for successful ISR planning is a threat event template. The threat event template should depict where threat activity will occur, in relationship to friendly activities, in time and space. The information needed to develop this template is derived from predictive analysis—the process of analyzing and integrating known facts about the threat to determine the threat's likely actions.

will be conducted within a specific area that focuses collection assets on specific ISR objectives. When conducting recce operations, the squadron should be given one, or a series of, ISR AO within which the squadron or its troops will conduct operations. This area must be large enough to facilitate ISR operations, and designating NAIs and TAIs provides further ISR focus. On the noncontiguous battlefield of the future, it is conceivable that the ISR AO could overlap with other maneuver units' AOs. Close coordination and continuous communications will be required between maneuver units and the recce squadron.

The ISR AO serves a similar function when conducting security operations. The new ISR AO is redefined as the area that begins at the boundary of the main body's AO and extends, in multiple directions, as far forward as necessary for ISR forces to collect the intelligence information needed to answer the IBCT commander's PIR. Forces in the ISR AO locate, identify, and track enemy forces; furnish information on the terrain and enemy; delay, deceive, and disrupt the enemy; and provide early warning to main body forces. As with recce operations, a greater level of coordination and communication is required between maneuver forces and the recce squadron.

Although the definitions of surveillance and recce sound rather sophisticated and would subsequently complicate ISR operations, these operations are fairly simple. The S2 and S3 develop a plan, based on IPB products and the commander's information requirements, that directs squadron assets where to look for threat activity (NAI); when to look for threat activity (threat event template or predictive analysis); and exactly what threat activity to look for (PIR and SIR).

The squadron then deploys into the recce AO, in accordance with the respective tactics, techniques, and procedures, and looks for a specific threat activity at the specified place and time. Once the squadron confirms or denies threat activity, it quickly reports the information to the commander so he can make tactical decisions for employing his main body forces. ISR operations tell the IBCT commander what he needs to know in time for the brigade to act. The ISR operation's success or failure directly affects the success or failure of the IBCT's mission.

In the future, as the Army gets smaller, there will be a higher demand for accurate and timely battlefield reports on the threat's size, location, and disposition. The recce squadron will provide the commanders within the IBCT with the critical intelligence information needed to employ this smaller force over a larger battlespace. This makes it even more crucial that commanders and staffs are proficient in planning and executing ISR operations.

The IBCT recce squadron provides the commander with an effective ISR collection asset. Through successfully planning and executing ISR operations, the IBCT commander will gain the information superiority he needs to conduct decisive and shaping operations with the brigade. However, to successfully execute ISR operations, the commander and staff must develop a complete and comprehensive ISR collection plan to support the brigade commander's decisionmaking process. By leveraging computer and communications technology, and thoroughly planning and preparing for ISR operations, the recce squadron will be a major contributor to the IBCT's success. ***MR***

NOTES

1. U.S. Army Field Manual (FM) 3-55, *Reconnaissance Operations* (Washington, DC: U.S. Government Printing Office [GPO], TBP).
2. FM 3-0, *Operations* (Washington, DC: GPO, 14 June 2001).
3. Ibid., 11-7.
4. Ibid., 11-8.
5. Ibid., 11-9.

Major Michael C. Kasales, U.S. Army, is the S3, 1-14th Cavalry Squadron, 3d Brigade Combat Team, 2d Infantry Division, Fort Lewis, Washington. He received a B.A. from DePauw University and is a graduate of the U.S. Army Command and General Staff College. He has served in various command and staff positions in the continental United States and Europe, including observer/controller, National Training Center, Fort Irwin, California, and division gunnery officer, 1st Armored Division, Bad Kreuznach, Germany.

Information Operations in the IBCT

Major Cynthia A. Glenister, U.S. Army

We need to find new ways to deter new adversaries. . . . We need to make the leap into the information age, which is the critical foundation of our transformation efforts.

—Defense Secretary Donald H. Rumsfeld

THE FIRST OF SEVEN planned interim brigade combat teams (IBCTs) is fielded with its complement of interim armored vehicles (IAVs) and digitized command, control, communications, computers, intelligence, surveillance, and reconnaissance (C4ISR) systems. Using current off-the-shelf equipment combined with a unique organizational structure, the 3d IBCT, 2d Infantry Division, has capabilities unlike any other brigade combat team.

In October 1999, the Army's leadership unveiled the Army Vision, outlining a need to transform the Army based on emerging security challenges and the requirement to respond more rapidly across the full spectrum of operations. IBCTs are designed as early entry forces capable of deploying within 96 hours to fight and win small-scale contingency operations in complex and urban terrain. Keeping pace with the changing face of warfare, the IBCT employs both conventional and asymmetric capabilities. The IBCTs provide the commander in chief with a new option of decisive contingency response. The IBCT cannot conduct forced-entry operations, but it does give the joint force commander an improved capability to arrive immediately behind forced-entry forces and to begin operations to shape the battlespace.

The IBCT's major fighting components are three mechanized infantry battalions, which use highly mobile, medium-weight IAVs. The brigade's effectiveness is enhanced by a field artillery battalion; a robust reconnaissance, surveillance, and target acquisition squadron; military intelligence, antiarmor, engineer, and signal companies; and a brigade support battalion. These elements also use the IAV with variants for mobile gun systems; antiarmor carriers; 105-millimeter (mm) artillery; engineer mobility support vehicles; medical support vehicles; nuclear, biological, and chemical reconnaissance; and command and control (C2) carriers. The field artillery has 155mm towed artillery assets.

The guiding document for incorporating the IO section into the unit is the IBCT Organizational and Operational Concept. . . . The IO section was created to facilitate incorporating nonlethal effects, providing planners for IO, CA, PSYOP, and electronic attack (EA). Additionally, a brigade operational law team provides legal support to all aspects of IO.

The IBCT headquarters staff closely mirrors that of a division, given the unit's enhanced organic capabilities. Beyond the coordinating staff group consisting of the S1, S2, S3, S4, and S6, there are several special staffs and staff groups in the IBCT, including—

- Medical personnel in the IBCT surgeon's section.
- Military police and engineers in the maneuver support coordination cell.
- Air defense artillery and aviation personnel in the air defense and air space management section.
- Field artillery personnel in the fires and effects coordination cell (FECC).
- Information operations (IO), civil affairs (CA), psychological operations (PSYOP), and legal personnel in the IO section. Although these special staff elements are at the brigade headquarters, the total number of personnel authorized has been kept to

Although the IBCT has no organic EA assets, EA assets may support the unit during small-scale contingency operations. The EW officer works closely with the targeting technician in the FECC and the collection management officer in the brigade S2 to plan, coordinate, and synchronize EA operations.

a minimum, 111 total, to facilitate deployability.

The IBCT has the most advanced C4ISR technologies available. This technology gives commanders and their staffs a digital, fully dimensional common operating picture (COP) of the battlefield. This digital view enables commanders to locate and track critical targets precisely, conduct simultaneous operations with lethal and nonlethal means, operate with joint and multinational forces, and recognize and protect their own forces and other friendly forces. Each IBCT element is equipped with an appropriate type of Army Battle Command System (ABCS).

While the IBCT doctrinally conducts the military decisionmaking process (MDMP) in accordance with U.S. Army Field Manual 101-5, *Army Planning and Orders Production*, the manner in which it executes the process is entirely different.[1] The unit leverages and exploits the technology afforded by ABCS/C4ISR to conduct distributed, collaborative, and simultaneous decisionmaking. The IBCT's planning methodology is conducted via the C4ISR architecture, allowing commanders to exchange plans and ideas from their current locations. Situational understanding and accelerated MDMP allow the commander and his staff to develop more relevant courses of action because they have a complete understanding of the operational situation.

The IO Sections Role in the IBCT

To assist in responding to the changing international security environment, an IO section is embedded into the IBCT. Among other tasks, the section—

- Plans nonlethal effects to degrade the adversary's information environment.
- Leverages assets in response to security challenges such as terrorism, international crime, computer hackers, and genocidal violence.
- Advises the command on cultural awareness to foster a positive relationship with the local civilian and military leadership in the area of operation.
- Manages the media to portray the unit's best possible image.

The IO section at the brigade level represents a type of microcosm of the IO effort at division and higher. Tactical exploitation of national capabilities (TENCAP) extends the reachback capability of the brigade, granting a COP available only to division-level commanders in the past.

The guiding document for incorporating the IO section into the unit is the IBCT Organizational and Operational (O&O) Concept, dated 30 June 2000. This concept identifies a need for effects-based targeting. It places the responsibility to closely coordinate lethal and nonlethal effects under the FECC's control, dual-hatting the field artillery battalion commander as an effects coordinator. The IO section was created to facilitate incorporating nonlethal effects, providing planners for IO, CA, PSYOP, and electronic attack (EA). Additionally, a brigade operational law team provides legal support to all aspects of IO.

As IO doctrine evolves, traditional staff responsibilities for electronic warfare (EW) and operations security transition from the G/S3 to the IO staff officer. Likewise, public affairs (PA) coordination, traditionally the adjutant's area of staff responsibility, becomes tied to the IO arena as well. Just as at the corps and division levels, the debate continues on the proper staff relationship of the IO section within the IBCT organizational construct. The latest draft of Brigade Special Text 6-20-40, *Tactics, Techniques, and Procedures for Fires and Effects for Brigade Combat Team Operations,* indicates the IO section is embedded into the FECC.[2] Although this document and IBCT O&O indicate the IO section works in the FECC, some IO elements do not cleanly fit within the effects coordinator's responsibilities for effects-based targeting. As a result, in the 3d IBCT, the IO officer has maintained a position on the special staff, working for the executive officer.

IO section organization. The commander and his staff use the IO section to synchronize all IO elements and related IO elements. In a stability and support operations (SASO) environment, the IO section is significantly engaged as the center of gravity for operations shifts toward employing asymmetric means available to the IBCT. The section consists of two IO officers, a CA major, an EW captain, and a PSYOP staff sergeant. As an integral part of effects planning, the IO section synchronizes organic IBCT assets with reachback resources to develop the IO component of the effects concept and operation plan. Reachback enhances the IO section's operational agility by improving its access to timely and relevant information, enhancing overall situational awareness of the nonlinear battlefield.

The IBCT lacks significant organic IO assets. Depending on the nature of the contingency and the adversary, the IO section may be augmented with additional plugs, such as CA, PSYOP, PA, and EA elements, to reinforce its capability for IO and nonlethal effects planning and coordination. The section's resident expert facilitates the request process for the appropriate mix of augmentation and rapidly implements the assets into operations. Effective use of IO elements allows the commander to use his maneuver elements more efficiently. For example, if CA and PSYOP efforts deter a potential riot or demonstration, other assets would not be required to respond to a resultant incident. Unfortunately, cause-and-effect relationships are not easily drawn in using nonlethal assets, and often the results occur over a considerable amount of time, so empirical evidence is often difficult in determining an action's effectiveness.

CA. Civil-military operations (CMO) play an increasingly important role in military operations globally. The CA officer is the staff lead for planning and coordinating CMO in the IBCT area of operations. Civil affairs team B (CAT-B), consisting of three CA team As (CAT-As), would be expected to support the IBCT during SASO. CAT-B would also influence relations between military forces and civil authorities, and coordinate and synchronize the efforts of nongovernment and international organizations. CAT-B would be under the control of IBCT headquarters, and depending on mission, enemy, terrain, troops, time, and civilians, the CAT-As are allocated in a direct support mode to the battalions or held in general support and applied to the IBCT main effort.

PSYOP. The PSYOP noncommissioned officer (NCO) plans and coordinates PSYOP support to IBCT operations from attached PSYOP elements or higher headquarters. A tactical PSYOP detachment (TPD), consisting of three tactical PSYOP teams (TPTs), would be expected to support the IBCT during a SASO with face-to-face, loudspeaker, and product dissemination operations to influence adversary forces' behavior. If required, the TPD might be augmented with PSYOP assets to locally produce requested products, making it a self-sufficient PSYOP element. The IO section provides staff liaison with the TPD and integrates and synchronizes their operations with the maneuver plan. The PSYOP NCO assists the TPTs by ensuring requisite security support is provided to conduct operations and keeps the commander informed on activities.

PA. Responding to the local and international media can be consuming. However, quickly and accurately releasing information to the media will have a lasting positive impact. During SASO, the media challenge often revolves around the legitimacy of U.S. military involvement due to the political nature of the deployment. Winning the media's trust takes on increasing importance in this environment, given the media's ability to influence international and domestic public opinion. Lacking a PA officer on the staff, the IO section serves in that capacity, developing media guidance and talking points, and coordinating media visits until augmentation support arrives. The section also corresponds with the division or joint task force PA office, providing information on IBCT significant events that need to be addressed through press releases. A PA team from the PA detachment at higher headquarters could provide media support to the IBCT according to the PA information strategy.

EW. Disrupting the enemy's C2 and fire-direction vehicles deliberately and quickly reduces the information flow to and from the opposing commander, placing him at a disadvantage. Although the IBCT has no organic EA assets, EA assets may support the unit during small-scale contingency operations. The EW officer works closely with the targeting technician in the FECC and the collection management officer in the brigade S2 to plan, coordinate, and synchronize EA operations. The EW officer is responsible for identifying potential adversary C2 and intelligence, surveillance, and reconnaissance targets and deconflicting targets against the joint restricted frequency list. The EW officer also requests EA support from higher headquarters.

The IBCT headquarters staff closely mirrors that of a division, given the unit's enhanced organic capabilities. Beyond the coordinating staff group consisting of the S1, S2, S3, S4, and S6, there are several special staffs and staff groups in the IBCT, including . . . information operations, civil affairs, psychological operations, and legal personnel in the IO section.

The IO section at the brigade level represents a type of microcosm of the IO effort at division and higher. Tactical exploitation of national capabilities (TENCAP) extends the reachback capability of the brigade, granting a COP available only to division-level commanders in the past.

Battalion fire support officers and NCOs serve as IO specialists at their echelons. They are sensitized to cultural considerations of the local population in their areas of operation. In the absence of supporting CATs, they serve as advisers to their commanders for conducting CMO. The battalion fire support officers and NCOs also serve as battalion points of contact for PA coverage.

Information assurance (IA). Digitization, a battlefield enhancer for the IBCT, is also a potential vulnerability. IA operations provide availability of information systems, authentication of participating users, confidentiality of transmissions, and nonrepudiation of transmitted or received information. The IBCT, with support from higher headquarters, can protect communications, networks, and computers; detect misuse or intrusion of these systems; and rapidly restore information once compromised, corrupted, or destroyed. Although the brigade S6 has primary responsibility for IA, the IO section and brigade S2 also become involved in ensuring the IBCT maintains a sufficient defense posture against penetration and subsequent exploitation of its information systems. Routine meetings are held with this IA triad to address vulnerabilities and countermeasures.

IO tactics, techniques, and procedures (TTP). As mentioned earlier, the IO section is integrated into the FECC to contribute to the targeting process, primarily focusing on nonlethal effects. The O&O Concept defines these effects as "the result of the directed application of lethal and nonlethal capabilities to achieve a desired purpose of outcome in support of the commander's intent. Effects are a component of the operations plan and must be fully integrated and synchronized with other elements of the plan, particularly the scheme of maneuver. Planning must include the control and management of unintended effects and their impact on the mission. Normally, effects planning does not include subordinate maneuver forces or the direct fires organic to those forces. When fully integrated, effects and maneuver set the conditions for tactical success and combine to achieve the commander's intent."

The IBCT IO section TTP are not unlike those conducted at division level, although the process is expedited due to the increased use of digitization and collaborative planning. Operating in an asymmetric operational environment places increased emphasis on nonlethal effects. The IO section develops IO objectives and coordinates, integrates, and synchronizes nonlethal effects to support the overall targeting process. Subject matter experts within the IO section coordinate closely with augmentation team chiefs and higher headquarters to maximize their assets' use. An IO working group meets before the daily targeting meeting to refine targets that support IO objectives. The effects coordinator or another FECC representative attends the working group and refines the brigade targeting guidance before the targeting meeting based on discussions during the meeting. Since the IO section is only a coordinating staff, the brigade S3 releases the tasking once the plans are approved.

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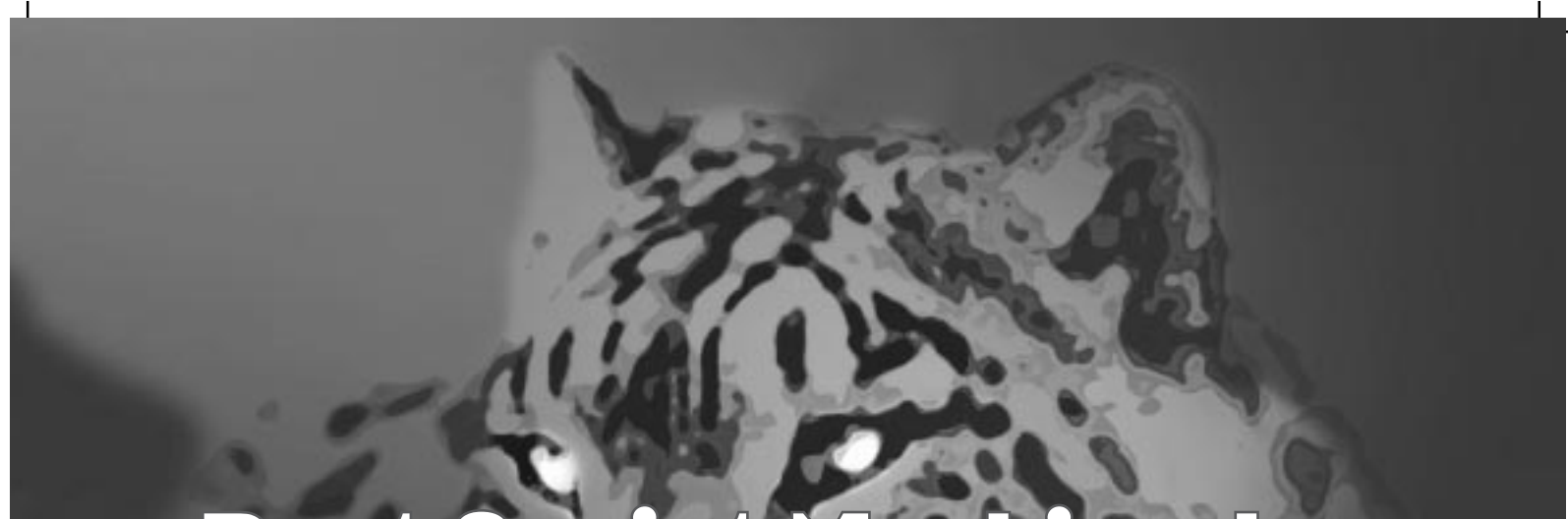
As the Army transforms to a more agile and versatile force, doctrine is attempting to keep pace. The Fort Lewis, Washington, conversion of the first two interim brigades is proceeding, with 3d IBCT anticipated to achieve initial operational capability in the near future. At the same time, IO doctrine is evolving, with increased insight on the practical applications in real-world contingencies. As the IBCTs begin operational deployment, the relative importance of IO will be demonstrated in the increased flexibility of employing the force to deal with nonconventional forces on the battlefield. ***MR***

NOTES

1. U.S. Army Field Manual 101-5, *Army Planning and Orders* (Washington, DC: U.S. Government Printing Office, 31 May 1997).
2. Brigade Special Text 6-20-40, *Tactics, Techniques, and Procedures for Fires and Effects for Brigade Combat Team Operations*, 3d Interim Brigade Combat Team, 2d Infantry Division, Fort Lewis, Washington, June 2001.

Major Cynthia A. Glenister, U.S. Army, is the information operations officer, 3d Interim Brigade Combat Team, 2d Infantry Division, Fort Lewis, Washington. She received a B.S. from the University of Wisconsin, an M.S. from the University of Oklahoma, and is a graduate of the U.S. Army Command and General Staff College. She has served in various command and staff positions, including chief of information operations, G3 Operations, Eighth U.S. Army, Yongsan, Republic of Korea; joint reconnaissance officer, U.S. Forces, Korea, Yongsan; and commander, I Corps Military Intelligence Support Element, Fort Lewis.



Post-Soviet Maskirovka, Cold War Nostalgia, and Peacetime Engagement

Lieutenant Colonel Timothy C. Shea, U.S. Army

The leopard cannot change its spots, or so goes the old saw. This seems to be the case with republics of the former Soviet Union in the military-diplomatic arena. Tim Shea reveals how these republics still use the old Soviet strategy of maskirovka—measures that deceive, distort, mislead, and misinform—to counter the effects of U.S. peacetime military engagement.

A military operation involves deception. Even though you are competent, appear to be incompetent.
—Sun Tzu

MASKIROVKA is a component of statecraft—a diverse spectrum of stratagems employed to distort the enemy's view of Soviet positions, designs, and missions and to alter the perception of their own side and their clients as well. Maskirovka, simply defined, was a set of processes employed during the Soviet era designed to mislead, confuse, and interfere with anyone accurately assessing its plans, objectives, strengths, and weaknesses.[1] This Soviet concept included, but was not limited to, deception, disinformation, secrecy, and security.[2] Since independence almost 10 years ago, the world has not witnessed large-scale purges or witch hunts of former Soviet or party officials in countries such as Russia, Ukraine, Georgia, Moldova, or Uzbekistan.

The reinvented communist nomenclatura, as heads of state and chiefs of the power ministries in most of the former republics, has adapted maskirovka to protect its new nonideological self-interests. The Soviet successor states use passive and active measures of maskirovka in varying degrees to their advantage to manage aspects of bilateral relationships with the United States to serve their own ends while resisting or subverting U.S. shaping efforts. The rise of the reinvented Soviet Committee for State Security (KGB) security organs to prominence and power, the crippling effect of rampant corruption, and increasing state control of the media have inhibited the deepening of U.S. bilateral relations in the region.[3] Maskirovka is used to counter the effects of U.S. peacetime military engagement.

Peacetime Military Engagement

A unilaterally imposed fog of war that distorts the truth for both external and domestic consumption clouds peacetime military engagement inside these countries. Maskirovka permits regional military leaders to feed on U.S. freebies while feigning interest in transparency, professing pro-NATO strategic orientations, or claiming support for

Ukraine's Chief of Air Defenses Volodymyr Tkachov and Defense Minister Oleksandr Kuzmuk telling reporters on 13 October 2001 that a Ukrainian missile fired during a training exercise may have been responsible for the 4 October destruction of a Russian airliner over the Black Sea. Ukrainian officials had earlier maintained that a missile could not be responsible for the crash.

Wide World Photo

In Russia and Ukraine, the Kursk submarine sinking and destruction of an apartment building in Brovary Tochka by an errant missile illustrated how even ministers of defense routinely lie in a clumsy attempt to control information. . . . NATO expansion, the Partnership for Peace Program, and the plethora of related activity have helped the huge military bureaucracy of former political officers find a niche as de facto administrators or as journalists handling military engagement activities with their former ideological foes.

democratic models. These symbiotic, or even parasitic, bilateral relationships have evolved to conceal the fact that many post-Soviet leaders depend on, even in partnership, forces and interests that view real reform as a threat to their place in society. In some cases, official and criminal structures have effectively merged.

The strategic ambiguity that has followed the end of the Cold War has given birth to a concept whereby the United States engages the world to influence and advocate adopting Western ideals. While many might consider it pretentious to think the United States could have dictated what happened in the former Soviet Union, the United States often readily assumes blame for all that has not gone well. All too often, when planning or executing engagement activity, maskirovka is ignored or viewed as a minor irritant instead of the countermeasure it really is.

The engagement lobby plays a large role in this debacle and exists on both sides. These interest groups benefit almost entirely from the money and missions processes as bureaucracies, but they have no stake in actually measuring progress or achieving concrete results. As individuals and organizations, these groups tout numbers of events and quantities of programs as indicators of progress. Because the activity is largely funded externally, engagement activity can justify creating and maintaining organizations to administer these programs and associated hefty increases in personnel authorizations. Examples include the Army National Guard State Partnership Program and the U.S. European Command Joint Contact Team Program (JCTP). On the former Soviet side, decentralized groups work with and without ministry of defense (MOD) approval to squeeze resources out of the engagement program, often with tacit approval from their counterparts in the engagement lobby.

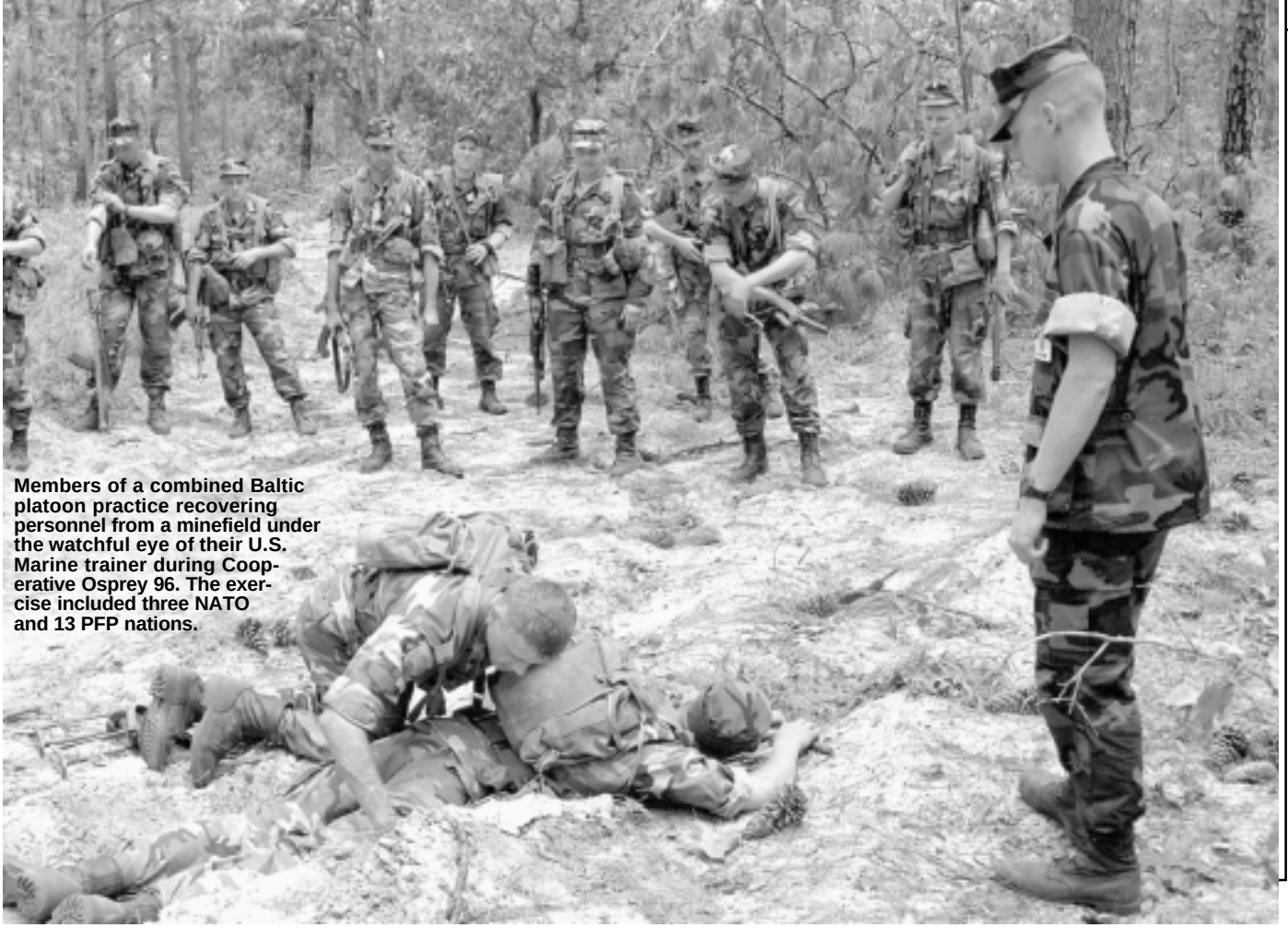
For example, the JCTP's stated mission is to deploy teams made up of U.S. military Reserve component and active duty members to selected countries of Central and Eastern Europe. It assists their militaries as they transition to democracies with free market economies. Developed in 1992, the program's stated purpose is to assist the armed forces of emerging democracies of Central and Eastern Europe as they develop into positive, constructive democratic societies that are apolitical and nonthreatening, respect human rights, and adhere to the law. The JCTP prides itself on the absence of regional specialists or area expertise because such specialists are unofficially considered to be contrary to the spirit of openness and transparency. The result is a huge, ineffective bureaucracy that does not know how to recognize or counteract maskirovka. A menu of very basic events is executed over and over again to familiarize former Soviet officers on various military topics to little or no effect.

A Culture of Lies

Hardened realpolitik has long since replaced the early days of post-Cold War sentimental optimism. "Show us the money" attitudes prevail as the countries on the east side of the old Iron Curtain each considers its strategic importance to the United States as paramount. The Soviet experience imparted a culture of deceit on those societies, particularly on the military. Lying routinely occurs at the most senior uniformed levels, even when an argument is clearly untenable or contradicted by obvious facts.

In 2000, in Russia and Ukraine, the Kursk submarine sinking and destruction of an apartment building in Brovary Tochka by an errant missile illus-

US Marine Corps



Members of a combined Baltic platoon practice recovering personnel from a minefield under the watchful eye of their U.S. Marine trainer during Cooperative Osprey 96. The exercise included three NATO and 13 PFP nations.

U.S. support for NATO's PFP Program has exceeded $590 million during the past 7 years according to a new study from the General Accounting Office. According to the report, former President William J. Clinton's administration provided $165 million in assistance outside the framework of the Warsaw Initiative but within its objectives.

trated how even ministers of defense routinely lie in a clumsy attempt to control information.[4] Such old-thinking officers are not accustomed to accountability or having the veracity of their rhetoric challenged. Increased censorship, both military and civilian, helps to minimize criticism, discourage open debate, and ultimately defeat reform efforts. NATO expansion, the Partnership for Peace (PFP) Program, and the plethora of related activity have helped the huge military bureaucracy of former political officers find a niche as de facto administrators or as journalists handling military engagement activities with their former ideological foes. A small minority of Western-thinking, progressive officers are simply outmatched, outnumbered, and overwhelmed under these dreary circumstances and repugnant leadership.

The Real Peace Dividend

Peacetime military engagement delivered a huge windfall profit to the shadow economies operating inside the various MODs after the Soviet Union's demise and the end of the Cold War.[5] U.S. support for NATO's PFP Program has exceeded $590 million during the past 7 years according to a new study from the General Accounting Office.[6] According to the report, former President William J. Clinton's administration provided $165 million in assistance outside the framework of the Warsaw Initiative but within its objectives. Established in 1994, the PFP has offered defense-related assistance to 22 former communist states in Europe and Central Asia. This is not to say the money has been wasted, but it is no small sum and understandably would be attractive to the cash-strapped governments in the region.

In theory, peacetime military engagement has merit. The idea is for the United States—more specifically, the Department of Defense—to make relatively small, timely investments in activities that might yield disproportionate benefits in terms of limiting or preventing crises that might require a more substantial, costly response later. In practice, these former apparatchiks frequently use maskirovka to persuade unwitting U.S. counterparts to grant lucrative spoils associated with U.S. fully

funded military engagement activities such as trips abroad, computers, or direct reimbursement for suspect expenditures that claim to support bilateral engagement activity.[7] These Soviet-bred senior leaders are frequently successful in absorbing and diffusing efforts to influence their behavior. The United States often lacks the sophistication to recognize the inappropriate effects and undesired consequences of throwing resources and programs at the problem without a thorough evaluation.

Frequently, the post-Soviet senior policymakers on the other side of the table are reinvented security officials who, through their actions, define policy as protecting state secrets and hiding official corruption. These ideologues are the gatekeepers who aim to siphon, divert, or misdirect resources away from the intended target on behalf of oligarch masters in uniform.

Cold War Nostalgia

The good old days of unquestioned political loyalty and censorship, and the dominance of the KGB are probably gone for good, but these elements have been transformed to serve the same masters. The primary instrument of control in the Soviet armed forces was the Main Political Directorate. This organization maintained a vast structure, with significant representatives at every organizational level, and had its own chain of command and reporting. In each military unit down to company level, a deputy for political affairs, or zampolit, assisted the commander.[8] Not the same as a regular officer, the zampolit served the Main Political Directorate in both the MOD and Communist Party structures. The zampolit was formally tasked to organize and conduct political work, participate in planning for combat and political training, cultivate loyalty to the Soviet motherland and Communist Party, and conduct propaganda among the soldiers on communism's successes and hating their enemies.[9]

Ironically, in many cases, these political commissars are now responsible for monitoring loyalty and conducting indoctrination along national lines within their MODs. These officers, along with security services, are primarily responsible for managing bilateral engagement portfolios with the United States. The unique systems of politico-military controls of Marxist-Leninist principles have degenerated into a crude instrument for corrupt senior officials to cultivate personal loyalty and to obscure a realistic picture of condoned activities to outsiders. The national KGB successors maintain close contact and cooperation with counterparts throughout the former Soviet Union that transcend sovereignty.[10]

The discredited communist ideology may have gone underground, but the supporting infrastructure has survived intact. The zampolit position has evolved into a position with a new title and similar responsibilities without the communist ideology—deputy commander for indoctrination or, literally, upbringing work. Frequently, the post-Soviet senior policymakers on the other side of the table are reinvented security officials who, through their actions, define policy as protecting state secrets and hiding official corruption.[11]

These ideologues are the gatekeepers who aim to siphon, divert, or misdirect resources away from the intended target on behalf of oligarch masters in uniform. Most senior officers, as products of the dysfunctional Soviet system, developed essential survival skills based on the principles of maskirovka. Especially in the absence of ideology, maskirovka has proven useful in misrepresenting strategic orientations, masking political ideology, and hiding corruption. These worst of the worst—opportunists with absolute, unchecked power—were not expunged, not swept away. Their continued presence in senior positions of responsibility is especially harmful.

The Fatigue Factor and Managing Maskirovka

Can peacetime military engagement be rehabilitated? Most who are intimately involved have become jaded and frustrated, but not all have given up hope in recognition of the long-term challenge of these acute problems. As President George W. Bush's administration produces its own national military strategy to replace the "shape, prepare, respond" trilogy, it will be forced to examine ways to adapt peacetime military engagement to the current ground truth in the former Soviet Union. At this juncture, such a review is long overdue. Alienation has crept into bilateral relations because of unfulfilled expectations on both sides. Progress has been unsteady and inconsistent. Desperate requests for materiel and financial assistance unabatedly continue. Approaching 10 years of independence, these countries are largely motivated to participate in engagement activity in its present form for the economic benefit or to gain a positive advantage with the increasingly hegemonic United States and

NATO. Others are playing Moscow against Washington. Subtle and organized resistance has stymied reform efforts.

U.S. offers of assistance often are no longer appreciated because of lesser funding and fewer resources when compared to the recent past. Frustration reveals itself in many ways. For example, Congress recently voted to cut funding to Ukraine for Fiscal Year (FY) 2002 from $175 million to $125 million because of its lack of progress on economic reform and human rights. Ukraine's leaders are outraged and feel entitled indefinitely to the status quo of $175 million. Anything less is viewed as an insult. U.S.-funded renovation projects, whether for humanitarian purposes or to support PFP peacekeeping exercises, often regress to blatant extortion campaigns. Military bosses insist on cash payments at commercial rates for shoddy MOD construction and substandard materials to finance their corrupt activities.

Recognizing this serious problem, the United States, since FY 2000, has provided goods and services (instead of direct reimbursement for exaggerated costs incurred) to support PFP exercises through contractors who are required to use competitive bidding. Resistance has been fierce and unrelenting. The situation is analogous to the Philippines where, in 1992, after a combination of uncompromising Philippine financial demands and an overestimated sense of its strategic importance led U.S. forces to pull out fully. Today, the Philippine government is much more appreciative of common bilateral interests.

U.S. offers of assistance often are no longer appreciated. . . . For example, Congress recently voted to cut funding to Ukraine for FY 2002 from $175 million to $125 million because of its lack of progress on economic reform and human rights. Ukraine's leaders are outraged and feel entitled indefinitely to the status quo of $175 million. Anything less is viewed as an insult.

Bribing foreign rulers to gain cooperation or compliance is an ancient, legitimate tactic. In situations where the problem is not corruption in the system but, rather, that corruption is the system, this approach will not work. Developing countermeasures to defeat maskirovka begins with recognizing that such a problem exists. Overcoming maskirovka requires more energy and greater attention than just allocating resources and developing programs. Regional experts must be involved from top to bottom to continually assess the effectiveness of the engagement program. Ten years after the fall of the Soviet Union we can no longer afford to have amateurs involved in crafting and executing these expensive programs. Maskirovka must not be ignored—it is an asymmetric threat. "The success or failure of international propaganda or disinformation depends on the willingness of the audience to be deceived."[12] ***MR***

NOTES

1. According to the 1978 *Soviet Military Encyclopedia*, maskirovka is "A means of securing the combat operations and daily activity of forces; a complex of measures designed to mislead the enemy as to the presence and disposition of forces and various military objects, their condition, combat readiness and operations and also the plans of the commander . . . it is a concept that combines the use of cover, concealment and camouflage, operational security deception and misinformation. Strategic maskirovka is carried out at national and theater levels to mislead the enemy as to political and military capabilities, intentions and timing of actions. In these spheres, as war is but an extension of politics, it includes political, economic and diplomatic measures as well as military."

2. Richard H. Schultz and Roy Godson, *Dezinformatzsia: Active Measures in Soviet Strategy* (Washington, DC: Pergamon-Brassey, 1986), 37. Dezinformatzsia is usually an active measures technique. Strategic disinformation assists in executing state tasks and is directed at misleading the enemy concerning basic questions of state policy, military-economic status, and the policy of certain imperialist states with respect to each other and other countries and the specific counterintelligence tasks of the organs of state security. It can contain both true and false information leaked to an opponent, intending to deceive decisionmakers rather than the public at large.

3. Serhiy Zhurets, "The Army Attacks Internet and Simultaneously Toughens Censorship," Ukrainian *Daily Den* (24 March 1999), 2.

4. Minister of Defense Igor Sergevev and other top Russian officers provided contradictory and untruthful information on the Kursk submarine sinking in August 2000.

5. Peacetime military engagement is defined as all military activities involving other nations intended to shape the security environment in peacetime. See Joint Publication (JP) 3-16, *Joint Doctrine for Multinational Operations* (Washington, DC: U.S. Government Printing Office [GPO], 5 April 2000), I-9.

6. Emily Woodward, "GAO Reviews U.S. Financial Contributions to NATO Partnership for Peace," *Defense News,* 24 July 2001.

7. JP 1-02, *Department of Defense Dictionary of Military and Associated Terms* (Washington, DC: GPO, 12 April 2001) defines security assistance as "a group of programs authorized by the Foreign Assistance Act of 1961, as amended, and the Arms Export Control Act of 1976, as amended, or other related statutes by which the United States provides defense articles, military training, and other defense-related services, by grant, loan, or cash sales in furtherance of national policies and objectives."

8. Christopher N. Donnelly, *Red Banner:The Soviet Military System in Peace and War* (Coulsdon, Surrey: Jane's Information Group, 1988).

9. U.S. Army Field Manual 100-2-1, *The Soviet Army: Operations and Tactics* (Washington, DC: GPO, 16 July 1984), 3-6.

10. Masha Gessen, "In Russia, Echoes of the Old KGB," *US News & World Report* (30 July 2001), 28.

11. For example, the Deputy Minister of Defense for Policy in Ukraine, General-Colonel Viktor Bannykh is a professionally trained KGB officer brought into the MOD in 2000 to fill this new position. See his official biography at <http://www.mil.gov.ua/biogr/auto_ban.htm>.

12. *The New Image Makers: Soviet Propaganda & Disinformation Today,* Ladislav Bittman, ed. (New York: Pergamon-Brassey, 1988).

Lieutenant Colonel Timothy C. Shea, U.S. Army, is assigned to the J8, Joint Staff, the Pentagon, Washington, DC. He received a B.A. from the University of Rhode Island and an M.A. from the University of Kansas and is a graduate of the U.S. Army Command and General Staff College. He has served in various command and staff positions, including S3, 2d Battalion, 15th Infantry Brigade and executive officer, 1st Battalion, 26th Infantry Division, Schweinfurt, Germany, and as the Army Attaché, U.S. Defense Attaché Office, Kiev, Ukraine.

U.S. Army Transformation: The U.K. View

Colonel William H. Moore, U.K. Army, Royal Artillery

From the United Kingdom's (U.K.'s) perspective, the U.S. Army transformation process is one of the more adventurous and exciting military programs in the world today. Emerging from U.S. Chief of Staff General Eric K. Shinseki's vision, transformation has moved ahead at a breathtaking pace.

The transformation process is an entirely logical program. If successful, it will focus the U.S. Army on key aspects of rapid effect and deployability, making it an appropriate force for the 21st century. The process, which appears to have minimal risk, will improve the legacy force, thus maintaining a strong warfighting capability while developing its interim and objective forces. With adequate funding, transformation will be successful.

The U.K. Ministry of Defence differs from its U.S. counterpart in that it is more closely integrated because it is smaller and must make the most economical use of its scarce assets. For example, the U.K. Army does not have its own budget, and procuring equipment is a truly joint affair. Despite rhetoric from the Association of the U.S. Army, U.S. Army transformation might not have the full support of the other U.S. services. Also, despite U.S. Secretary of Defense Donald Rumsfeld's ongoing review, how much defense support the U.S. Army has in terms of dollars is still unknown.

To the outside world U.S. Army transformation seems focused on equipment and the revolution in military affairs. Yet, this is not the focus in discussions with anyone from the U.S. Army Training and Doctrine Command or with some U.S. Army senior leaders. The U.S. Army, in fact, is taking a holistic view of what it is currently doing, but this picture is not portrayed outside the United States. Some might not consider such an observation valid, but if allies do not have a real grasp of what is happening, they might find it difficult to work out how to best work together.

A year after the Labour Government came to power, the U.K. faced no clearly identifiable strategic threat. While its first priority was to ensure national defense, the armed forces were to pursue a more expeditionary role. But how were they to be configured for such a mission?

A future battlespace might have many more players than it might have had during the Cold War. The army would operate more closely with maritime and air components to truly project power where it was most needed. More, and different, allies would be involved in coalitions. There would also be more interested parties in theater than hitherto. Contractors; other government departments; nongovernment organizations, such as the Red Cross and other charity-based organizations; the United Nations; bodies like the Organization for Security and Cooperation in Europe; and multinational cartels would be in theater sooner and remain behind longer. People, possibly neutrals, would continue to depend on the armed forces, support their actions, or be downright hostile to their mere presence.

To conduct a successful campaign, a totally integrated approach by all parties would be required to bring a crisis to a satisfactory conclusion. This is the environment in which the U.K. sees itself operating in the future. Allies are key. The U.K. cannot go it alone; therefore, its developmental priorities have been defined accordingly. First and most important is the ability to conduct alliance and coalition warfighting; second is using those same capabilities to conduct national-only warfighting (a rerun of the Falklands, for example); third is using the same set of capabilities again.

Other U.K. and U.S. allies must operate alongside one another to create such a situation. Equipment interfaces will be important, and how business is conducted should be broadly recognizable, as should our way of thinking—interoperability of the mind is probably the main factor. The United States is running ahead so fast that its allies might not be able to keep pace or even to catch up. This might be the allies' problem. Why should the United States wait for us? The bottom line is that we will need to fight together, and this might require some accommodation now. Thus, it is of the utmost importance for the U.K. to understand what the United States is doing. To conduct effective operations, both nations must remain engaged in dialogue. The U.K. must understand U.S. concepts of operations and capabilities before it gets to the line of departure if it is to help in an integrated effort.

Any country's developmental process must be cognizant of the trends and challenges that are likely to face its armed forces. While trying to predict the future is fraught with danger—as many have discovered to their cost—there are, nonetheless, certain enduring trends and challenges that all face. One challenge is to get into the theater more quickly and with more effect to deter, coerce, and ultimately defeat an enemy. The U.K., therefore, is extremely supportive of the concept behind the U.S. transformation process. Indeed, the U.K. has defined a similar idea and termed it rapid and early effect, the rapid part being the military contribution to early effect where the emphasis is not on the speed of deployment but, rather, the operational and tactical impact once deployed.

The U.K. Army is currently only capable of conducting rapid effect in low-risk or small other operations. In fact, it is rather good at doing so, as for example, the 1st Battalion, Parachute Regiment's highly successful operation that effected the rescue of hostages from the West Side Boys in Sierra Leone. But, the U.K. needs to do better; it needs to develop its

forces to conduct rapid effect in more intense other operations. The U.K., however, does not believe it will be able to develop a rapid effect force capable of warfighting against a matched enemy until about 2025 or that the step change in technology will occur in the timeframe the U.S. Army is planning for the objective force. If it does, it would allow the more rapid transformation of some U.K. forces, but the revolution has yet to occur.

The U.K. is attempting to improve the capability of its light forces, developing its medium forces, and rebalancing its heavier forces. Medium forces will be configured, under present tentative plans, to fit the C-130 envelope, and the U.K. Army is currently deciding the effect that this concept might have on its equipment program.

The Future Rapid Effect System is in an early stage—embryonic when compared to what the United States is doing with its interim brigade combat teams (IBCTs). Nonetheless, because the U.K. does not believe in a short-term technology fix, its approach is more incremental.

The U.K. is trying to identify the technologies it wishes to insert downstream then introduce them incrementally as the various constituents become proven. Such a modular approach reduces technical risk and allows a more level funding profile. This latter point is most important because of the joint nature of the U.K. Army's procurement process. An expensive project with high-tech risk is vulnerable when defense budgets are squeezed. The process, therefore, is one of evolution, not revolution—incremental, rather than big bang.

U.K. medium forces are unlikely to be hard-wired, so their peacetime structure is different from U.S. IBCTs. The U.K. envisions force packaging from its heavy, medium, and light forces to achieve the necessary effect. In a simple warfighting scenario, light forces would effect entry; medium forces might stabilize the situation; heavy forces would produce decisive action. U.K. medium forces must have utility around the spectrum of conflict. The army is too small to develop niche capabilities. Until this step-change in technology occurs, medium forces will have to be used in the following ways:

- To support heavy forces in warfighting, such as in rear area and flank operations and on complex terrain.
- For more intense other operations, short of warfighting.
- For rapid effect in operations short of warfighting.

The U.K. Army has yet to decide on how these functions might evolve in structural terms, but one solution might be to develop medium forces from current mechanized and light forces to provide an intervention and utility force. This recognizes that full-spectrum ground maneuver using medium forces can only take place in about 2025. Then, medium forces, when developed, must have the widest possible usefulness in the future operating environment. In this concept, the U.K. Army is completely onboard with the U.S. Army; the ends are the same, only the ways and means differ.

Overly relying on technology to produce solutions for warfare is a great concern. In the end, resolving a conflict invariably centers on issues of people and territory, tasks that demand land force deployment.

Killing at a distance using high-tech sensors linked to long-range weapon systems from all services against a matched enemy in a warfighting operation is an entirely logical solution. But even sophisticated enemies will not wish to subject themselves to such high-tech destruction and defeat, and technology might not have the desired effect on less-sophisticated adversaries. We should be wary of analysts who say we can always win at a distance. History does not bear this out. ***MR***

Colonel William H. Moore is a British regular officer serving an operational tour in Sierra Leone, West Africa. He has an honor's degree and a master's degree and is a graduate of the U.K. Staff College. He has served in various command and staff positions, including commander, 7th Parachute Regiment, Royal Horse Artillery, which is part of Britain's rapid reaction forces, and as colonel, Force Development, British Directorate General of Development and Doctrine.

Cashiering Freedom for Security: Lessons in Modern Terrorism

J. Michael Brower

Reflecting on the indispensability of the terrorist technique in 1920, Leon Trotsky, the first Soviet Commissar for War, wrote about the issue while on a military train during Russia's bloody civil war (1918-1922). Trotsky's pamphlet, *Terrorism and Communism*, still speaks to those on either side of the ramparts of a "new" kind of war—one with a long, tortured past.[1] "War, like revolution, is founded upon intimidation. A victorious war, generally speaking, destroys only an insignificant part of the conquered army, intimidating the remainder and breaking their will. The Red Terror . . . kills individuals and intimidates thousands."[2] The United States is now engaged in just such a war of intimidation—as victim and as avenging angel for the terrorist events of 11 September 2001.

Trotsky knew how to deal with terrorism—take terror to the terrorists. As the price of security, albeit with trepidation and reluctance, U.S. citizens must cashier some freedoms, much treasure, and many lives. Since terrorists have declared a perpetual war on America, America must place itself on a permanent war footing against them.

As a result of the 11 September terrorist attacks on the World Trade Center and the Pentagon, America is an awakened giant. But even Gulliver was helpless until the Lilliputians released him. Today's Lilliputian terrorists are quite possibly creating the rules of engagement, setting timetables, and doubtless anticipating unifying action from a wounded nation. Attacking foreign and religiously similar civilian

populations and their infrastructures only serves the terrorists' agenda.

Civilians, both rich and poor, are hostages to terrorists committing their macabre, cowardly crimes before an appalled global audience. Terrorist groups are also the wellspring of radicalism. Unbridled killing only augments the cadre of martyrs and martyrs-in-waiting. In preventing the coalescing of Islamic forces, who are themselves divided unless united by indiscriminate attack, we may yet act with fury—but not with blind fury.

Sadly, the most savage countermeasures are required for the short term, given that terrorists have access to the means, if not immediately the weapons, of mass destruction. To deter future terrorist aggression and to cut off the head of the focus of terrorist evil in the modern world, we must deliver justice to Osama bin Laden.

To bin Laden's sponsors and followers—those who view Western life as an abomination—thousands of killed and wounded are but a dress rehearsal. Chemical, biological, and possibly tactical nuclear weapons use could be the next logical step. Similarly, even as a coalition unites to face the menace of terrorism, indefensible prey to terrorist cells abounds: water supplies; fragile infrastructure; landmarks; refineries; communications; and ultimately, large, urban population centers. For the terrorist, all means to harm the public are within the Pale.

Thousands of people were killed in the September attacks, but tens and hundreds of thousands of lives are forfeit absent bold (but measured) visionary (but timely) action. Anticipating the retaliation to inevitable military action, the West must be prepared to institutionalize a passport society, suffer racial profiling, possibly federalize security for airlines or regulate them entirely, expand search and seizure, and permit extremes when interrogating suspected terrorists. Later, it may be necessary to militarize labor and the borders and civil society in general and practice armed retaliation with extreme prejudice against suspected terrorists and their safe havens. Americans are understandably loath to suspend their social liberties, but after the next terrorist attack, itself an inevitability, they may be more amenable.

Reliance on small, elite units to penetrate terrorist cells and establishing nuclear, chemical, and biological hit squads is now the dictated, if detestable, order of the day. Similarly, assassinating active, notorious terrorists and their sponsors; seizing assets from the same; exacting zero tolerance for trafficking in the craft of terror; and changing America's governmental and social culture to put security before business are the fate of a properly wary populace. Wholesale adoption—even expansion of—counterterrorist methodologies that terror-seasoned states like Israel embrace is almost a foregone conclusion.

In August 1940, Trotsky wrote: "History teaches us that when adventurist organizations lack sufficient political forces to solve a task, the idea of terrorist acts arises by itself. This is the classic formula of individual terrorism."[3] Terrorism is the last act of the desperate organization, an appeal to chaos. If we ignore historical instruction that those who have mastered this foul art form provide, we will become the gravedigger of U.S. freedom and national survival.

Trotsky taught that terrorism is a calculated, though misguided and misanthropic, approach to addressing the helplessness of the masses. Defending against it is a permanent societal posture. The only historically effective short-term solution to terrorism is to deal with its symptoms terroristically. For the long term, state-sponsored, institutionalized terrorism must witness its breeding grounds defoliated by a process of expanding social and economic justice. When common people, in whose behalf the terrorist acts, renounce violence and dare to hope for a better future, terrorism withers away. In navigating a complex, interdependent, yet economically polarized world full of apocalyptic weapons, these are the only roads. ***MR***

NOTES

1. Trotsky, Leon, *Terrorism and Communism* (Publisher unknown, 1920).
2. Trotsky, Publishing information not given.
3. Ibid.

J. Michael Brower is a program specialist with the U.S. Department of Justice, South Burlington, Vermont. He received a B.S. from Park College. He served in the U.S. Air Force from 1987 to 1991 and is a member of the Vermont Air National Guard. He is a frequent contributor to Military Review. *His last article, "The Promise of e-Commerce to Defense: The Road to Savings," appeared in the July-August 2001 issue.*

MR Letters

MR Misses the Mark?

Thanks for the copies of *Military Review*, but I'm disappointed in the editing of my book review (*RIPCORD: Screaming Eagles Under Siege, Vietnam 1970* (Novato, CA: Presidio Press, 2000). RIPCORD was not fought at (or anywhere near) Dienbeinphu, but—in the words of my original text—"corresponded" in historical terms with that 1954 French-Vietminh battle. Second, helicopters were not (your wording) "available" to companies and platoons, which were (my wording) "helicopter-less." Now, I appreciate that editors have the prerogative of abridgement (though my review was shorter than several in the issue), but I don't think you should have taken the liberty of changing my meaning, especially when the result is so historically, geographically, and tactically absurd.

COL William L. Hauser, *USA, Retired, Manhasset, New York*

Editor's note: MR regrets any confusion. Clearly we did not understand Hauser's wording.

Then, Again. . . .

I [just received] the latest *Military Review* in which two of my reviews appear. I am honored. After I finished reading my own contributions, I checked my own texts, and the changes you made were minor, but they improved the pieces. Is an author really writing this to an editor?

Lewis Bernstein, *Senior Historian, SMDC, Huntsville, Alabama*

The New Interim Brigade Combat Team: Old Wine in New Bottles?

Major Gregory A. Pickell, U.S. Army National Guard

We do not know yet the exact shape of our future military, but we know the direction we must begin to travel. On land, our heavy forces will be lighter. Our light forces will be more lethal. All will be easier to deploy and to sustain.

—President George W. Bush[1]

Glowing pronouncements from President George W. Bush aside, the concepts underlying the U.S. Army's new interim brigade combat team (IBCT) are hardly revolutionary. While forming the cornerstone of the Army's transformation campaign, the interim brigades are, to a surprising extent, resurrections of the experimental 9th Motorized Division and the Army of Excellence (AOE) Light Infantry Divisions of the 1980s. Little has changed since then. The same conceptual flaws that plagued the earlier attempts to break with orthodoxy are being replicated with eerie consistency today. Not only are the basic concepts behind the Army's current interim-brigade design not new, they are ideas that have failed twice.

The 9th Motorized Division

In 1980, U.S. Army Chief of Staff (CSA) General Edward (Shy) Meyer initiated the 9th Motorized Division concept, which was radical for its time. Using a variety of emerging technologies, Army leaders hoped to create an entirely new type of division. According to one account, the new formation would be used as a test bed to "develop, evaluate, and implement initiatives relating to operations, organization, doctrine, and technology."[2] Leaders envisioned enhancements in the areas of "command and control, firepower, tactical mobility, survivability, and flexibility."[3]

At the time, the initiative was regarded as a truly audacious idea that could eventually transform Army force structure. In the end, the 9th Motorized Division experiment was regarded as a failure. The innovative concept envisioned the application of a series of technologies that did not then exist, forcing the interim organization to substitute off-the-shelf equipment that became permanent when new technologies failed to materialize.[4]

Surprising no one, the interim division's enhanced mobility was offset by inadequate direct and indirect firepower, placing the organization at a severe disadvantage when facing mechanized or armored opponents. In the end, the inability to field the new technologies, coupled with significant institutional skepticism concerning what was essentially the brainchild of one man (Meyer), doomed the first attempt to field a revolutionary kind of Army division.

The Light Division

The AOE light division was also seen as a bold step forward. According to its proponents, it was designed to deploy anywhere in the world within 96 hours. In fact, strategic mobility was its overriding feature. Following its certification as a part of the Army force structure, the light division was theoretically capable of being deployed to a combat theater with 550 C-141 sorties.

Unlike its ill-fated motorized cousin, the AOE light division actually became part of the conventional force structure, in part because of the political savvy of CSA General John A. Wickham. Several of the divisions were eventually fielded, although none were ever deployed as a complete organization.[5]

While the light division's deployability was its chief calling card, deployability was virtually its only attractive feature. The light division's complement of equipment, driven almost exclusively by the need to limit airlift roundtrips, placed too much emphasis on combat assets and neglected the division's vital combat support (CS) and combat service support (CSS) capabilities. Ironically, despite its emphasis on combat assets, the organization was still unable to meet opposing mechanized and armored formations on anything approximating equal terms. Worst of all, because of its overwhelming fixation on strategic mobility, as measured by C-141 flights, the light division possessed little or no operational or tactical mobility once deployed.[6]

Enter the Interim Brigade

Interim brigade combat teams draw directly on many salient features of their recent antecedents. With a stated goal identical to that driving the formation of AOE light divisions, interim brigades are slated to be deployable in just 96 hours.[7] Like the 9th Division, interim brigades will possess unparalleled tactical mobility once deployed. Also in common with the 9th Division is the interim brigade's extensive dependence on off-the-shelf equipment pending the arrival of yet-to-be-developed technologies and weapon systems.[8]

Taking its cue from the organizational opposition suffered by Meyer in his advocacy of the motorized division concept, current Army leaders have closely followed the Wickham model. By ensuring that critical proponent agencies, such as the U.S. Army Training and Doctrine Command and the U.S. Army Forces Command are on board, CSA General Eric K. Shinseki has largely guaranteed that this particular Army transformation campaign initiative will live beyond his tenure.

While, unlike its two predecessors, the new interim brigade might represent a programmatic success story, this is hardly enough to ensure its future survival. Until the Army successfully overcomes the operational, doctrinal, and technological hurdles that plagued the motorized division and the AOE light infantry divisions, the interim brigade's future

cannot be viewed with optimism.

Like the AOE light divisions, the overriding hallmark of the interim brigade is its strategic mobility. Unfortunately, virtually all of the enhancements related to the brigade's command and control (C2), lethality, survivability, and flexibility will have to wait for the fielding of yet-to-be-developed technologies and weapons platforms. In the meantime, the only meaningful design requirements being developed and tested are those relating to transportability. The interim brigade platform must be C-130 transportable; everything else is negotiable.[9]

If emphasis on strategic agility is laudable, it is also explicitly dangerous to the soldiers involved. While the interim brigade will likely be deployable in 550 sorties, this agility is likely to be achieved at the cost of the CS and CSS assets needed to make the organization viable in a theater of war. As with the 9th Motorized Division, the interim brigade will lack the ability to stand up to a mechanized or armored opponent in a direct firefight. The new initiative solves only one problem—tactical and operational mobility—while sidestepping the much tougher problems that surround sustainability, survivability, and lethality.

If the interim brigade's inability to survive on the 21st century direct-fire battlefield places formations at risk, the lack of effective fire support presents an even greater challenge. As currently designed, the interim brigade will lack even the woefully inadequate 105-millimeter artillery battalion that represented the light divisions' heaviest close battle fire support. Why? Because self-propelled howitzers, such as the Paladin and the much-anticipated Crusader, are deemed too heavy to play a role with the new formations. The result will be an organization at a disadvantage in the direct firefight and wholly at the mercy of the enemy in the indirect-fire arena. Unfortunately, adding the high-mobility artillery rocket system and mortars as deep and close-in firepower assets will not significantly redress this shortcoming.

Three fundamental truths plague the Army's new interim brigade concept:

1. The new interim brigade would lack the same CS and CSS assets that the AOE light divisions lacked which undercut their effectiveness in the 1980s.

2. The advanced technologies necessary to allow the new interim brigade to hold its own on the modern battlefield do not exist.

3. Fire support will not improve in the future unless a completely revolutionary fire support system is developed.

These three red flags should prompt a time-out, not a Pentagon call for full speed ahead. In effect, the only IBCT breakthrough is the development of operational and tactical mobility once a unit is deployed, although even this capability comes at an exchange ratio of 3 to 1 in terms of deployable combat assets as compared to AOE light infantry divisions.[10]

Ultimately, the interim-brigade concept's success hinges overwhelmingly on the accelerated development of new technologies. The concepts' proponents hope it will achieve what has historically been unattainable—lightweight, highly deployable units that can go toe to toe with an armored or mechanized opponent while providing indirect-fire support and requiring minimal logistic and C2 support.[11]

History should not tie the Army down or hold back the prudent application of new technologies; but neither should the Army ignore lessons learned. If history is any judge, the chances of a revolutionary system arriving in time to save the interim brigade concept are not encouraging. ***MR***

NOTES

1. George W. Bush, speech at Norfolk Naval Air Station, Virginia, 13 February 2001. Online at <www.humaneventsonline.com/articles/02-19-01/dagosting.html>.
2. Lewis Bernstein, "Army Experimental Formations and Their Possible Influence on the Establishment of the Force XXI Experimental Force" (Fort Leavenworth, KS: Center for Army Lessons Learned, undated). Online at <http://call.army.mil/ products/exfor/history/xforhst.htm>.
3. Ibid.
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Major Gregory A. Pickell, U.S. Army National Guard, is an inspection analyst in the office of the Inspector General, Springfield, Virginia. He received a B.S. from the U.S. Military Academy and an M.S. from Georgetown University. He has served in various command and staff positions in the continental U.S., Germany, and Bosnia. His article, "Planning for Major Theater Wars: The Worst Case," appeared in the January-February 2000 issue of Military Review.

Operation Anaconda, Shah-i-Khot Valley, Afghanistan, 2-10 March 2002[1]

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They just kept sending them into our meat grinder. We've killed several hundred of them, but they just keep coming.

—Major General F.L. Hagenbeck[2]

As of 2 March 2002, Operation Anaconda was the largest combat operation in Afghanistan of the War on Terrorism that began after the attack on the World Trade Center and the Pentagon on 11 September 2001. Major General F.L. Hagenbeck, commander of the U.S. Army 10th Mountain Division, led the major effort to clean out remaining al-Qaeda fighters and their Taliban allies in the Shah-i-Khot Valley. The mission involved about 2,000 coalition troops, including more than 900 Americans, 200 U.S. Special Forces and other troops, and 200 special operations troops from Australia, Canada, Denmark, Germany, France, Norway, New Zealand, and Afghan allies.

Operation Anaconda began before dawn on 2 March 2002. The battle area occupied about 60 square miles. The terrain is rugged, and the peaks have many spurs and ridges. The base of the Shah-i-Khot Valley is approximately 8,500 feet in altitude.

The surrounding mountain peaks rise to 11,000 to 12,000 feet. Only small juniper trees grow on the mountain slopes. The actual snow line began about 100 feet above the valley floor. Mountain villages include the hamlets of Sher Khan Khel, Babal Khel, Marzak, Kay Khel, and Noor Khel. On the day battle began, the valley floor was sprinkled with small patches of snow. Temperatures hovered near 15 to 20 degrees Fahrenheit.[3]

The opposition forces were mostly non-Afghan al-Qaeda and Taliban members although the force also included some Arabs, Chechens, Uzbeks, and Pakistanis. Scattered groups, numbering as many as 20 members, including some family members, holed up in a 3,000-year-old complex of mountain tunnels, caves, and crannies.

The terrorists, who had come to the valley villages six weeks before the battle began, took control; prudently, most of the civilians left. One Afghan villager said the people were told, "If you want to leave or stay it is up to you, but we're staying in those caves because they were ours in the holy war against Russia."[4] The terrorists gave 700 sheep to the people of Shah-i-Khot for their troubles; others received bus fare.

Predator drones and other CIA intelligence assets spotted the enemy assembling in groups south of Gardez, but rather than immediately attacking, U.S. Central Command (CENTCOM) let the terrorists gather to present a larger target. A small U.S. Special Forces detachment accompanied local Afghan commander Zia Lodin as his men entered the valley from the south and headed to Sirkankel to flush out suspected al-Qaeda and Taliban forces.[5]

To the east and southeast of the combat area, Afghan generals Kamal Khan Zadran and Zakim Khan's units had responsibility for the perimeter. U.S. Special Forces teams were with each Afghan general to help coordinate operations. This noose of allied troops enclosed four specific combat zones. The two most significant zones were code-named Objectives Remington and Ginger. Reconnaissance forces slipped into the mountains a few days before the main attack was scheduled to begin on 27 February, but the operation was postponed 48 hours because of rainy, blustery weather.

When the operation began, Zia ran into trouble. His 450-man unit was caught in a mortar barrage and prevented from entering Sirkankel. Two of Zia's men were killed and 24 were wounded. Retreating under mortar and rocket fire, the Afghan column stumbled into a second ambush to the rear. U.S. Special Forces Chief Warrant Officer Stanley L. Harriman was killed. Most of Zia's trucks were destroyed, and his troops retreated to Gardez.[6]

The hole left by Zia's retreat had to be plugged. U.S. troops, who had been slated to block fleeing terrorists or hopscotch around the battle zone, were immediately dropped into the gap to await Zia's return. Elements of the U.S. Army's 10th Mountain and 101st Airborne Divisions were to set up blocking positions to support Afghan allies as they swept through the villages and dislodged al-Qaeda forces. Both units ran into heavy resistance.

Allied special operations troops were tasked to block known routes of escape from the south and southwest, conduct reconnaissance, and call in air strikes. Brigadier General Duncan Lewis, commander of the Australian Army's special operations forces, told the press that about 100 Special Air Service (SAS) commandos had been inserted into remote observation points atop mountains near the towns of Marzak and Sher Khan Khel. The commandos were to pinpoint rebels retreating from the large target area known as Remington.[7]

The 10th Mountain Division, 2 March

1/87th Infantry Regiment Command Sergeant Major (CSM) Frank Grippe said that the regiment's initial mission was to conduct blocking positions in the southern portion of the valley south of Marzak. Scout sniper teams directly east of Marzak were watching two small canyons that ran out of the village. Just to the north of Marzak, a platoon-size element guarded a larger canyon that ran east out of the valley. In the south, intelligence units estimated that their two positions would possibly have to contain the most terrorist exfiltrators. They also had two blocking positions, one in a canyon running from the southeast of the valley and one running directly south.[8]

At 0600, 2 March 2002, 125 men from the 1/87th Infantry Regiment and three CH-47 helicopters arrived. One CH-47 went to the northern blocking position, which had a platoon-size element and two scout snipers set up as hunter/killer teams. In the south, 82 men on the other two CH-47s arrived at two landing zones separated by about 400 meters. To the south, troops landed at the base of an al-Qaeda stronghold and literally within a minute of being dro-pped off began taking sporadic fire as they moved to cover. A small ridgeline separated the landing zone from the source of fire. Some soldiers maneuvered to a small depression behind the ridge while others moved onto some small ridges to their south.

After the first 10 minutes, al-Qaeda fighters left their caves and well-fortified positions to dump a heavy volume of fire onto the 10th Mountain Division. The al-Qaeda were familiar with the area and had all the low ground in the valley already zeroed in with their mortars, so it did not take long for them to bracket the 10th's mortar and cause the first injuries. After U.S. troops called in close air support, things quieted down. Once troops took cover, organizing and returning fire, they hunkered down for the 18-hour battle of attrition.

Grippe noted that more Afghan forces never arrived.[9] Some of Grippe's soldiers took out targets at ranges up to 500 meters with 5.56-millimeter M4 carbines and M249 small arms weapons. Second Lieutenant Christopher Blaha, who inscribed the names of two of his friends lost on 11 September on all his hand grenades, radioed in an air strike while his 1/87th rifle platoon returned fire on the enemy mortar position about 2,500 meters away. Within five minutes, a B-52 dumped its load and scored a direct hit on the mortar position, ending all movement.[10]

First Lieutenant Charles Thompson and his 10th Mountain troops secured a small al-Qaeda compound before a platoon-size force "hit them by surprise" south of the compound, the direction from which Zia's troops were supposed to have been moving. Thompson's unit repelled the assault with mortar fire and air strikes and apparently inflicted heavy casualties.

Later, the much-reduced al-Qaeda force came up the valley in twos or threes, firing some sniping shots but never mounting a serious threat to troops positioned on ridges on the eastern and western sides of the valley.

A mortar ambush injured at least 12 U.S. soldiers when they landed on top of an al-Qaeda command bunker near Marzak. Because they were wearing body armor, the shrapnel struck mostly their arms and legs. Private First Class Jason Ashline was struck by two bullets in the chest but survived because the rounds lodged in his vest. Ashline later told the press, "For a couple of seconds, everything was . . . in slow-motion. I was pretty scared because I didn't feel no pain. I thought, 'what's wrong?' I thought maybe I was dead."[11] Battalion Commander Lieutenant Colonel Ron Corkran later said, "I didn't really expect them to try and duke it out with us. I was just surprised at the intensity of what I saw on the valley floor."[12] Sergeant First Class (SFC) Thomas Abbott, whose right arm was injured by shrapnel, added, "I've never been so scared in my life. We thought we were all going to die."[13] The wounded were evacuated at around 2000. Near midnight, all elements were extracted from the battle.

The 101 Airborne Division, 2 March

Elsewhere in the valley, 101st Airborne Division brigade commander Colonel Frank Wiercinski landed on a ridge to the south of Sirkankel with an 11-man detachment whose mission was to monitor Charlie Company's progress. As they were moving the command post to higher ground, they began taking fire. Charlie Company was also under fire from an al-Qaeda military compound about 200 meters from where they had landed. Wiercinski described the fight: "We survived three mortar barrages during the day, and at one point we had between 9 to 10 al-Qaeda coming to do [kill] us. But instead, we did [killed] them."[14] Five Charlie Company soldiers stayed on the ridge and, while receiving sniper and machine-gun fire, covered those moving away from the mortar impacts.

Platoon leader Lieutenant Shane Owens' unit was forced into a hasty defense position from its original task of blocking the northern end of the valley. Support Platoon Leader Captain David Mayo of the 1/182d Infantry Regiment and his group provided security for the command and control element and conducted reconnaissance of potential resupply landing zones for the operation. As it turned out, the paratroopers' basic load was enough for 24 hours, and resupply was unnecessary.

Captain Kevin Butler watched in frustration as the enemy ducked into caves seconds before supporting jets dropped their bombs. Moments later, the enemy popped back out to wave, throw rocks, then fire their mortars and heavy machine guns at U.S. troops. Some rounds came within 30 meters of Butler's troops. Frustrated and angry, Butler ran 45 meters uphill six times onto the peak and exposed himself to enemy fire to pinpoint the enemy's position so he could call in an air strike. As the F-15s neared the caves, Butler ordered his own men to fire their 60-millimeter mortars. When the enemy reemerged to taunt the U.S. soldiers, the mortar rounds detonated over their heads and sprayed them with shrapnel. Four were killed.[15]

When allied troops searched the snow-covered mountains for caves and other signs of al-Qaeda fighters, they found several 57-millimeter recoilless rifles, an 82-millimeter mortar, some documents, and night-vision goggles identical to U.S. models.

Units of the 101st Airborne Division moved into the mountains north and east of Sirkankel to block mujahideen escape routes and, with Australian and U.S. Special Forces, blocked routes to the south. A new assault south along the high ground east of the valley began on 3 March.

The Special Operations Battle, 3-4 March

During a 24-hour-long battle on 3-4 March 2002, a handful of U.S. soldiers killed "hundreds" of al-Qaeda fighters while repelling waves of heavily armed mujahideen trying to overrun an isolated hilltop position in the Arma Mountains of southeastern Afghanistan.

The hilltop battle developed during a nighttime attempt to establish a new observation post overlooking a major al-Qaeda supply and escape route. Initial wire service reports were vague and confusing since few reporters accompanied the troops into combat. Later, Commander in Chief, CENTCOM, General Tommy Franks explained that many landing zones had been picked for helicopter assaults, and some enemy forces had evaded detection.[16]

At 0830, an MH-47 Chinook attempting to land a team on a hilltop near Marzak was hit by one or more rocket-propelled grenades (RPGs) and small arms fire. One grenade bounced off the helicopter and did not explode, but apparently the small arms fire damaged the helicopter's hydraulic system.[17] The Chinook managed to fly a short distance before making a forced landing. A head count showed that all but one of the team had managed to escape aboard the heavily damaged helicopter. The lone man not accounted for was U.S. Navy Petty Officer First Class Neil C. Roberts, a door gunner.[18]

According to Hagenbeck, a second Chinook, flying in tandem with the first and containing a quick reaction force of about 30 special operations troops, flew to the rescue of the downed aircraft.[19] The rescuers, who landed under fire later on the night of the 3 March at the hilltop where Roberts was last seen, came under intense fire. A 21-man Special Forces team was dropped off.

At 1200, a third Chinook was hit while inserting more special operations forces near the site of the first incident. According to Joint Staff briefer U.S. Air Force Brigadier General John Rosa, the helicopter was hit by machine-gun and RPG fire and either crash-landed or experienced a hard landing.[20] Six soldiers were killed and five wounded in subsequent firefights, since the valley suddenly swarmed with enemy troops. Senior Airman Jason Cunningham darted out of the helicopter several times to pull others to safety and was hit by machine-gun fire while treating the wounded.[21]

Al-Qaeda and Taliban leaders must have smelled blood, because the shift in U.S. tactics drew masses of them out of hiding and into combat. From the original estimate of only about 150 to 200 men in the area on 2 March, about 500 fresh fighters were detected moving from southern Afghanistan's Khost area as well as from Waziristan, a Pakistani

tribal area where smugglers traditionally found refuge and where many fighters fled after the Taliban government collapsed in November 2001.[22] Some estimates of terrorist strength ran as high as 2,000, but in truth, no one knew how many were in the valley.

Two Australian SAS teams, calling air strikes against the ring of attackers, saved the rescue group that was under intense fire from mortars, machine guns, and small arms. Spectre AC-130 gunships dumped 105-millimeter fire into mujahideen positions while Apaches shot up enemy vehicles moving toward the fight along the narrow mountain roads twisting up steep valleys. Hagenbeck told the press that the "hilltop was surrounded, but we were pounding them all night long. We thought when morning came they were going to do a ground assault. They were poised to overrun the [U.S.] position. We gave everything we had to get those guys out."[23] A heavily armed infantry force was standing by to fight its way up the hilltop to open an escape route if necessary.[24]

Shortly after dark, but before the moon rose on 4 March, more helicopters raced in under covering fire from dozens of strike fighters and attack helicopters to extract the Special Forces and their dead comrades. Next to be withdrawn was the 10th Mountain force. As the helicopters returned safely to Bagram Air Base, the sprawling hub of U.S. military forces in Afghanistan, throngs of soldiers anxiously awaited their return.[25]

In addition to 7 U.S. dead, there were at least 40 wounded soldiers, of which 18 were treated and returned to duty.[26] Another 9 Special Forces soldiers and 13 others arrived on 6 and 7 March at Germany's Landstuhl Regional Medical Center, all in good condition.[27] As the smoke figuratively cleared, Franks estimated that U.S. and Afghan forces had killed from 100 to 200 al-Qaeda and Taliban fighters during the hilltop battle.[28]

Continued Operations, 5-10 March

Although the intensity of fighting slacked off on 5 March, allied Afghan commanders sent fresh platoons to the fight while troops in contact kept pressing forward with minesweepers clearing their way. Franks described the fighting as a series of short, often intense clashes with small numbers of fugitives, saying, "We might find five enemy soldiers in one place and then perhaps some distance away from there we may find three and then some distance we may find 15 or 20."[29] One Special Forces soldier said the Taliban he encountered used "spider holes"—well-camouflaged shallow caves stocked with machine guns—that provided protection from the 500-pound bombs where "a couple of guys can hold up a whole company."[30]

At a Pentagon briefing that same day, Hagenbeck said, "We caught several hundred [al-Qaeda] with RPGs and mortars heading toward the fight. We body slammed them today and killed hundreds of those guys."[31]

Zia's forces finally resumed their advance on 6 March. U.S. commanders reported that U.S.-led bombing attacks and ground assaults might have killed as many as 400 fighters of a total of perhaps 800.[32] Sergeant Corey Daniel, who commanded an eight-man forward observation unit, told the press on 9 March that al-Qaeda resistance waned over the next few days as they ran out of ammunition and wilted under nonstop bombing.[33]

Coalition planes continued to hammer the terrorists. Between 2 and 5 March, coalition air forces, using a mix of long-range bombers and tactical aircraft, dropped more than 450 bombs, 350 of which were precision munitions.[34] Rosa told reporters that the U.S. offensive was making progress: "I would say we are softening up in certain portions, but there's still a lot of work to be done. We're far from over."[35]

Afghan commander Abdul Muteen said that U.S. and Afghan forces had advanced to within less than 100 meters of the enemy, who were trying to hold off the allies with copious machine gun and RPG fire. According to Muteen, the enemy was "ready for martyrdom and will die to the last man."[36]

At high altitudes, troop rotation was an important factor in maintaining operational tempo. Another 300 U.S. troops were brought into the battle from a U.S. helicopter base at Kandahar. The helicopters returned one or two hours later to refuel and head out again with fresh troops and supplies.[37]

More Afghans to the Front, 7 March

On 7 March, wind and sandstorms slowed allied air and ground operations, but near dusk a caravan of 12 to 15 Afghan tanks and armored personnel carriers rumbled down the main road south of Kabul toward Paktia Province and the high-elevation combat. The 1,000 Afghan reinforcements, under Northern Commander Gul Haider, were largely Tajik troops who had fought under their late commander, Ahmad Shah Massoud, against the Taliban.[38]

To western journalists the T-55 tanks and BMP-1 personnel carriers of General Muhammad Nasim's command looked like a moving museum. Eventually, mechanical attrition took its toll on the aging armored vehicles as they made the 60-mile drive from Kabul.

As the armor column reached the battle zone on 9 March, driving winds and snow forced al-Qaeda holdouts to retreat into their caves. The Tajiks were tasked with helping drive hidden Taliban snipers and fighters from the valley villages of Sher Khan Khel, Babal Khel, and Marzak.[39]

Because the initial grouping of 1,000 Afghan government troops committed to Operation Anaconda were ethnic Pashtuns, cooperation between them and the Tajiks could have been problematic. Apparently, by 10 March, complaints from local commanders prevented Afghan tanks from going any farther than Gardez.

Local ethnic Pashtun commanders warned they would fight national army forces if the Afghan defense ministry, controlled by ethnic Tajik General Mohammed Fahim, did not withdraw troops joining the offensive. Bacha Khan and the other Pashtun commanders insisted that they had enough firepower to defeat the al-Qaeda holdouts without the central government's help or interference.[40]

An unidentified Special Forces officer noted that the majority of the new forces were Pushtun and that their commanders had dropped old rivalries for the larger goal of eliminating the last of the al-Qaeda and Taliban pockets.[41] On 10 March, the officer estimated that between 100 to 200 al-Qaeda forces remained in the valley and that U.S. forces were not approaching the most dangerous part of the war but were in it.

Meanwhile, on 7 March and early on 8 March, U.S. troops came under fire in the southern sector. The clash seemed like a last, defiant gesture. With local terrorist forces severely hurt, U.S. forces repositioned. About 400 U.S. troops returned to Bagram Air Base on 9 March; however, within hours of the withdrawal of one-third of the 1,200 U.S. troops involved in the 8-day-old operation, B-52 bombers had to return to the area.[42]

(Mis)Perceptions of Afghan Allied Support

Some Afghan commanders in Gardez and Kabul asserted that the United States may have made the mistake of relying on a select few local commanders who gave wrong estimates of enemy troop numbers, then backed out on pledges to assist in the battle. Commander Abdul Mateen Hassankheil, who had 1,500 men fighting in Shah-i-Khot, was one of the critics: "The U.S. does not understand our local politics; it does not know whom to trust, and [it] trusts the wrong people."[43]

According to *Financial Times* journalist Charles Clover, in a report from Gardez, Hassankheil claimed that the beginning of the battle was badly planned because the United States relied on intelligence from Padshah Khan, who had told them that the mujahideen at Shah-i-Khot were less numerous than was actually the case.[44] Khan, a powerful local commander ousted as province governor weeks before the battle after clashes with militias in Gardez, allegedly had previously provided misleading information to U.S. military leaders. Khan denied that he had misled the United States and insisted that everyone in Gardez making accusations against him were al-Qaeda. Others in Gardez believed that Khan implicated his enemies as members of al-Qaeda so the United States would remove them.[45]

One unnamed U.S. officer, supposedly familiar with Zia's combat history, said that after Zia's men took heavy fire, Zia probably held them out of the fight with the self-assured knowledge that U.S. forces would have to take up the slack. "This is the way everybody fights over there. Fight and fall back. You don't want to take too many combat losses yourself. You save your resources from attrition to make sure you stay in power when it's all over."[46] Hagenbeck and Wiercinski said they did not know Zia's experience or background, but commanders who had worked with Zia before had spoken highly of him.[47]

Other U.S. officers theorized that someone leaked the plan of attack to the enemy. U.S. troops had trained as many as 500 Afghan allies for a major battle weeks beforehand, and there were hints that Afghans from both sides were talking to one another. This is not surprising given the nation's culture.[48]

Several U.S. soldiers heaped derision on Zia, painting a picture of a well-prepared opposition that made ample use of advanced weaponry. One soldier told the press that Zia "punked out on us. . . . I don't know how much we paid him, but I'll shoot him myself. He was supposed to roll in. Day 1, he was supposed to attack, and we were supposed to set up blocking positions so they couldn't get out."[49] Another soldier said Zia "didn't perform. He took a couple of mortar rounds and took off."[50] The soldiers had respect for the enemy: "They're a helluva lot more fancy than people give them credit for. . . . There were lots of weapons, mortar tubes. These guys were good with mortars."[51]

Noting that Afghan units had an insufficient force ratio but that they recovered from a serious mortar attack to take several key positions, one unnamed Special Forces colonel defended Zia: "The forces [Afghans] put together are different from our American military force. They're not an American military force. We can't expect them to be. It makes them no less noble, no less brave, no less willing to get out and engage our common enemy, and General Zia has, make no mistake about it. I take exception to those folks who complain about what these people have done to get us to this point in the battlefield. You wear his shoes that he has worn for five months in this battlefield."[52]

An unnamed senior USAF officer, quoted in the *Washington Times*, criticized U.S. tactics in the battle of Shah-i-Khot.[53] He asserted that commanders should have used air strikes for days or weeks, allowing precision-guided bombs and AC-130 howitzers to pummel the caves and compounds. This less-than-discreet officer also attempted to draw a parallel to the 1993 U.S. debacle in Mogadishu, Somalia. He pointed to the mid-December 2001 Tora Bora air campaign as a successful template, but he failed to mention that many al-Qaeda and Taliban leaders had slithered away during that period. Franks simply modified the Tora Bora tactics and sent in U.S.-trained Afghans to block escape routes and do the fighting, only committing relatively large numbers of U.S. ground troops when Afghan allies ran into problems. As another unnamed senior officer rightly observed, "No tactical plan ever survives the first encounter with the enemy. . . , and this plan changed 180 degrees."[54]

At a 6 March Pentagon press conference, U.S. Secretary of Defense Donald Rumsfeld said that "other than very brave people being involved, this has nothing to do with Mogadishu, and the individual who was killed; his body has been retrieved, and so too have the wounded. And, I don't see any comparison."[55]

When asked by ABC interviewer Sam Donaldson if the U.S. troops who were attacked and pinned down by al-Qaeda fire on 2 March were surprised by the tenacity of the resistance, Franks pointed out that intelligence is an inexact endeavor. "There will certainly be places . . . where we'll encounter very, very substantial resistance. We will almost never have perfect intelligence information. I would not downplay the possibility that forces that moved into this area got into a heck of a firefight at some point that they did not anticipate. I think that is entirely possible. . . . I think we've seen it in the past. . . . I think we'll see it in the future."[56]

Perhaps enemy commander Maulvi Saifurrahman Mansoor, who was up in the mountains, inadvertently best described the battle's outcome when he said that al-Qaeda fighters would "continue to wage jihad until our last breath against the Americans for the glory of Islam and for the defense of our country."[57] ***MR***

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Adam Geibel is the S2 of the 5/117 Cavalry Squadron, 42d Infantry Division, New Jersey Army National Guard. He is a correspondent for the Journal of Military Ordnance *and <www.strategypage.com>. His article "Poisoned Clouds over Deadly Streets: Grozny, December 1999-January 2000," appeared in the January-February 2002 issue of* Military Review. *He would like feedback from veterans of Operation Anaconda and can be contacted at <acarlg@aol.com>.*

The Search for Larry A. Thorne: Missing in Action, Vietnam

Jeffrey B. McDowell

To the U.S. Army, he was Captain Larry A. Thorne. In Finland, he was much-decorated war hero Lauri Torni. Vietnam was his fourth war. He had worn a uniform for three different armies, three different countries, in four different decades. In October 1965, he and three South Vietnamese crewmen disappeared in a Republic of Vietnam Air Force CH-34 helicopter somewhere in the jungle near Kham Doc.

Thorne enlisted in the U.S. Army in January 1954. However, it was not his first time in uniform—not even close. He had also served in the Finnish Army, fighting in the Winter War of 1939- 1940, and in Germany he did a training stint with the Waffen S.S. After his return to Finland, he fought in the Continuation War. He also fought with German guerrillas against the Russians during World War II, for which he was awarded the German Iron Cross Second Class. In six years, he had fought in three wars and had been awarded every award for valor that Finland had to give, including the Mannerheim Cross, Finland's equivalent of the Medal of Honor.

Thorne's stint with the Waffen S.S., complete with photos of himself in a German S.S. uniform, proved an especially tough hurdle to overcome when he later applied to join the U.S. Army. But, in 1956, after serious lobbying, he received U.S. citizenship and his commission as a first lieutenant in the U.S. Army Signal Corps.

By late 1960, Thorne had attained the rank of captain and become a member of the Army's elite Special Forces, the Green Berets. In 1962, he led his Special Forces detachment to the summit of Iran's Zagros Mountains to recover classified material that was being transported on a U.S. Army aircraft that had crashed. Although German and Iranian expeditions to the 14,000-foot crash site had failed, Thorne and his men secured the information and recovered the bodies of the aircrew.

In November 1963, Thorne and Detachment A-743 entered Vietnam for a six-month tour. In April 1964, author Robin Moore was in Tinh Bien where Thorne's detachment was stationed. Moore was gathering material for a book on Special Forces based on the detachment's exploits. The book, *The Green Berets*, became a best-selling novel and later became a movie that starred John Wayne.[1]

The film did not accurately depict the ferocious fighting that occurred at Tinh Bien and other camps. As evidence of the battle's true fierceness, consider this: every member of Detachment A-743 received a Purple Heart for wounds suffered at the camp in Tinh Bien. Thorne received two Purple Hearts and a Bronze Star for valor.

Thorne's second tour to South Vietnam was his last. In February 1965, he was assigned to the 5th Special Forces Group (Airborne). Soon afterward, Thorne was funneled into a special operations augmentation program, then into Headquarters Company, U.S. Military Assistance Command Vietnam (MACV), Special Detachment 5 89 1. Thorne became a soldier in the

secret war in Laos.

According to H.A. Gill III's book, *Soldier Under Three Flags*, Thorne was the newest member of the top secret Studies and Observations Group (SOG), whose mission was gathering information.[2] On 18 October 1965, Thorne and three Vietnamese crewmen were returning on a CH-34 helicopter from a covert mission in Laos. The pilot had radioed Kham Duc complaining about low visibility because of heavy clouds just before the helicopter disappeared. Exhaustive searches for the crash site were undertaken with no luck. Enemy fire, poor weather, and the rugged terrain made searching even more difficult. On 19 October 1966, the U.S. Army listed Thorne as killed in action, body not recovered.

Before his final mission, Thorne had been recommended for promotion to major and was being groomed for a staff job as an intelligence officer. He was posthumously promoted to major in December 1965. His family also received his posthumous Distinguished Flying Cross Medal.

The Search for Thorne

From the time of the loss in October 1965, when search and rescue sorties had flown over the helicopter's last reported position, until 1975, there were virtually no new leads about Thorne's disappearance. Then, a letter from MACV-SOG, dated 9 November 1965, provided a previously overlooked clue that documented a change in the possible last known location of Thorne's helicopter.[3] The clue was not much, but it was enough to pass on.

During the prisoner of war/missing in action (POWMA) technical talks in Hanoi on 5-6 April 1993, Thorne's case narrative was passed to the Vietnamese in an effort to open dialogue concerning the site of the crash and his fate. This action led to an interview by a joint task force-full accounting (JTF-FA) investigative team of a witness in Phuoc Son District Town, in Quang Nam Province, who claimed to have found a helicopter crash site in 1988 while hunting in the area. He led investigators to the site where some material evidence, including a data plate bearing serial number 56-3384, was collected. Unfortunately, the witness had no information concerning remains. Subsequent wreckage analysis determined the recovered data plate belonged to a known downed aircraft.

Thorne's case was again brought to the attention of the Vietnamese during technical talks held in Hanoi on 28 September 1994. During the 46th Joint Field Activity (JFA), in May 1997, a joint team traveled to Phuoc My in Quang Nam Province to investigate a report of an uncorrelated crash site in the area. The team interviewed two Vietnamese who claimed to have observed an aircraft flying toward Kham Duc in the spring of 1968. One man said he heard an explosion but did not attempt to locate the crash site for almost three weeks. The second man claimed no firsthand knowledge of the incident, but he said that his brother told him he had recovered some remains from the site in 1995. Despite the fact that one of the Vietnamese believed the crash occurred in 1968, nearly three years after it actually did, the team had the witnesses guide them to the site. The team recovered portions of a helmet, two dog tags belonging to Vietnamese individuals, 50 bone fragments, and pieces of aircraft wreckage consistent with a CH-34.

Not until May 1998, during the 50th JFA, was the crash site linked to Thorne's loss. Because of the number of undocumented CH-34 and other aircraft losses in the Kham Duc area, it was impossible to say with any certainty which site was the one where Thorne's aircraft crashed. Only after a number of sites had been thoroughly documented did the team conclude that the site was likely that of Throne's loss. The team recovered possible human remains and recommended the site for excavation.

The site was listed as a primary site for excavation for the 56th JFA, which took place 13 July to 14 August 1999. Army Captain Mark Hollingsworth, from the Army's Central Identification Laboratory (CILHI) at Hickam Air Force Base, Hawaii, led recovery element-6 (RE6). Hollingsworth and the rest of T Team, consisting of 12 service members, began excavating on 15 July.

Nicknamed the Highlanders, the team included an anthropologist, a communications specialist, a wreckage analyst, a medical specialist, and mortuary affairs specialists, explosive ordnance disposal personnel, and interpreters. "Everyone on our Highlander team saw the task before them as a challenge that needed to be overcome, weather, mud, critters, it didn't matter. If this was Thorne's crash site, we determined not to let it be his final grave," Hollingsworth said.[4]

On 21 July 1999, five young men from Helsinki, Finland, all members of the Lauri Torni Memorial Chapter, arrived in Hanoi. They had traveled more than 10,000 miles to help the JTF-FA/CILHI team excavate the helicopter crash site that was possibly Thorne's. The Finns included Kari Kallonen, a managing author for the Finnish publishing company United Magazines; Petri Sarjanen, a newspaper and television reporter; Juha Saxberg, a professional photographer and advertising designer; Juha Rajala, Thorne's nephew, a logistics manager; and Tapio Anttila, a videographer.

Within an hour of arriving at the base camp, the Finns began the first of many downhill treks from the base camp to the excavation site. One of the first people they met was Dennis Danielson, the anthropologist. Danielson, a former Marine and Vietnam veteran, took a few minutes from digging and overseeing the entire recovery effort to explain his role in the recovery operation. The anthropologist, or anthro, as the teams called him, maintained the site's scientific integrity. Random holes were not being dug; rather, the team was systematically removing layers from a tightly documented series of 4- by 4-meter grids marked by stakes and twine beginning at the point of impact and working toward the base of the hill.

The anthro determined the dig's direction and depth. The depth was marked by a distinct change in the

Errata:

"If you are going to make me an officer, how about Generalissimus?"

In our March-April 2002 edition, longtime Military Review *author, Jacob W. Kipp was mistakenly cited as being a retired lieutenant colonel in the byline of his earthshaking article "Tectonic Shifts and Putin's Russia in the New Security Environment."*

soil's strata. At this site, the correct depth was reached when the soil changed from an oily, clay-like material to a sterile, orange-brown soil. Two different types of soil, with no transition between the two, occurred at a depth of 4 to 6 inches. Because of the shallowness of the affected area, the team could make rapid progress down the slope. The Finns immediately noted the delicateness of the work. The tool of choice was not the shovel, but the pickaxe, which was used to scrape or dislodge the right amount of soil before striking the sterile layer directly beneath.

The recovery element hired about 60 local villagers to help with excavation. The Vietnamese formed two bucket brigades. This particular site included two side-by-side grids. One line of Vietnamese workers took soil from each grid. This method allowed Danielson to annotate in his sweat-stained notebook exactly where and in which grid items or remains were found.

The Vietnamese also helped sift soil through one-quarter-inch mesh screens. There were 10 screens per sifting station. One person oversaw two screens each. Activity was constant for 45 minutes of each hour. Eventually, 304 square meters of earth were sifted. Huge piles of finely sifted soil begin to form at the workers' feet as they searched for any clue to the identity of the helicopter's passengers.

Soon after the Finn's arrived, the site began to yield its first clues. Three human teeth were found the first day—two molars that had solid gold restorations and a tooth that had no restoration. Spare buckets began to fill with small parts from the demolished helicopter. Almost every bucket of earth revealed bullets—lots of them. Some still had intact casings, some did not. There appeared to be at least three separate types of ammunition on board: .45-caliber rounds; 7.62-millimeter rounds, and an unidentified type of rifle round, which could have been bullets for Thorne's favorite weapon, a 1903 Springfield rifle he supposedly always carried.

For four days the team sifted dirt, videotaped, and photographed the site, recovering nearly a dozen teeth, hundreds of possible bone fragments, data plates from the helicopter (definitely a CH-34), and other items. Hollingsworth said, "It didn't take long before the visiting Finns went from visitors to members of our team the Highlanders. When they weren't photographing the site, they were digging soil and sifting it right alongside us. We welcomed their help. Hearing the stories that Thorne's nephew told really put a face to the individual we were searching for."[5]

The Site

The helicopter struck near the top of a 3,000-foot mountain. The area was covered with heavy foliage including hardwood trees that towered 80 to 100 feet over the terrain. One of the trees contained a large section of the main rotor blade. The blade appeared to be folded around the tree itself. How far up the blade was carried as the tree grew during three decades is anyone's guess.

The helicopter burned on impact. After almost 34 years, there are still signs of scorched trees. The hillside has a 50- to 60-degree slope and is only accessible by foot. The closest road is one kilometer east of the site. To an observer, it was fairly obvious that most of the wreckage had washed down the hillside, gathering in piles. The 9-cylinder engine assembly lies intact, 3 meters from a huge tree. Despite the passage of time, it almost looks like it could be put back into service with a little work from a competent mechanic.

As with most sites, there has been some scavenging by the indigenous population. All of the sheet metal that once covered the downed helicopter is gone, ferried away with anything else that could be recycled, which is a common occurrence at crash sites in Vietnam. In fact, some sites are so heavily scavenged only unusable scraps remain. The Vietnamese are industrious, and more likely than not, the helicopter's engine is still at the site only because local villagers have not yet figured out a way to cart it off.

Post Script

Despite the fact that the site had not been positively identified as being Thorne's, the Finns were given a hero's welcome when they returned to Finland. They took with them pieces of wreckage and other mementos, including a European-made machine gun recovered from the site. According to Rajala, the wreckage will be placed in the Helsinki War Museum, which has dedicated a section to Thorne's memory.

Danielson officially closed the site on 2 August 1999. More than 300-square-meters of earth had been excavated and screened. The excavated area measured approximately 6- by 36-meters long with two 2- by 4-meter grids added to the base of the slope to encompass an additional area of possible deposition of burned ash.

The team recovered four personal items: two padlock keys, a small section of dog-tag chain, and a damaged Vietnamese coin. Human teeth and hundreds of small pieces of bone fragments were repatriated to the United States on 7 Monday 1999 in a ceremony at the Hanoi Noi Bai International Airport. U.S. Secretary of State Madeline Albright and U.S. Ambassador to Vietnam Pete Peterson attended. After the remains arrived in Hawaii on 8 September 1999, they were taken to the Army's Central Identification Laboratory.

In December 1999, a third book about Thorne was published in Finland. Titled, *Ristirelki 1965-1999*, it recounts the story of the Finns' experiences while in the highlands of Vietnam.[6] The United States and Finland sincerely hope that when DNA and dental-record analyses are completed, the mystery of Thorne's fate will finally be solved. Both countries benefited greatly from Thorne's military expertise.

The difficult and often dangerous hunt for and possible recovery of the remains of all personnel missing in Southeast Asia remains a high priority; it is the least we can do. ***MR***

NOTES

1. Robin Moore, *The Green Berets* (NY: Crown Publishing Co., 1965); *The Green Berets* (Hollywood, CA: Warner Studios, 1968).
2. H.A. Gill, *Soldier Under Three Flags: Exploits of Special Forces' Captain Larry A. Thorne* (Ventura, CA: Pathfinder Publishing, 1998).
3. Ibid.
4. Mark Hollingsworth in interview with the author, 24 July 1999.
5. Ibid.
6. Karin Kallonen, *Ristirelki 1965-1999* (publishing information unavailable).

Jeffrey B. McDowell was a Public Affairs Assistant and Navy journalist in the Public Affairs Office for Joint Task Force-Full Accounting, Camp H.M. Smith, Hawaii, from July 1997 to December 2000. He has also served in Bahrain and is current aboard aircraft carrier U.S.S. John F. Kennedy *stationed in the Northern Arabian Sea.*

MR Book Reviews

THE HEART OF CONFEDERATE APPALACHIA, John C. Inscoe and Gordon B. McKinney, University of North Carolina Press, Chapel Hill, 2000, 368 pages, $39.95.

In *The Heart of Confederate Appalachia,* John C. Inscoe and Gordon B. McKinney explore the history of western North Carolina before, during, and after the Civil War. The picture that emerges is of a much more complex society than the one popular images portray. Having been home to fewer slaves and slave-holders and, thus, less supportive of the Confederacy, western North Carolina was less inclined to support secession before the firing on Fort Sumter.

Once President Abraham Lincoln called for troops to force seceded states back into union, western North Carolina secessionists' sentiment became stronger than that of the rest of state, backing their sentiment with action. As the war dragged on and casualty lists mounted, they lost their enthusiasm, not so much because they were pro-Union, but because they were anti-Confederate. In this, Carolina highlanders' opinions differed little from their eastern Tennessee Unionist neighbors' viewpoints.

This book suffers from covering too much ground, but arguments are well presented and supported. The 41 plus pages of endnotes are a mine of information.

MAJ D. Jonathan White, ***USA, Smithfield, Virginia***

INFANTRY SOLDIER: Holding the Line at the Battle of the Bulge, George W. Neill, University of Oklahoma Press, Norman, 2000, 356 pages, $24.95.

Infantry Soldier: Holding the Line at the Battle of the Bulge, is George W. Neill's personal account of his life from the moment of his induction into the U.S. Army during World War II until he left the front lines during the Battle of the Bulge. Neill's military career began in the Army's Enlisted Reserve Corps at the University of California, Berkeley. The program allowed young men pursuing higher education to remain in college while attending ROTC. However, with the buildup for the cross-channel attack in 1943, most of these young men were called to active duty.

Neill paints a fair description of the realities of college boys coming face to face with the regular Army cadre and all the barriers, whether actual or perceived, they had to overcome. He takes us from the training cycle, to being shipped overseas, to training in England, to deploying to Europe. Neill illustrates an exact picture of the hurry-up-and-wait attitude and what the reality of the situation is to any private soldier when it comes to being told what is happening in relation to the big picture.

Neill records some aspects of leadership, especially at company grade and below, and his opinion about the seeming lack of concern from higher level leaders and from other soldiers whose job it was to support the fighting infantrymen comes across loud and clear. He expounds relentlessly with clarity and skill about the needs of frontline soldiers and units for proper clothing, food, shelter, and everyday basics.

Only someone who has been there can best characterize the frontline infantryman's plight. Neill is an excellent advocate for the common foot soldier. He urges leaders to recognize and find solutions to the hardship and privation soldiers must endure.

LTC Billy J. Hadfield, ***USA, Beavercreek, Ohio***

MOUNTAIN SCOUTING: A Handbook for Officers and Soldiers on the Frontiers, Edward S. Farrow, University of Oklahoma Press, Norman, 2000, 284 pages, $12.95.

That the U.S. Army had no Indian-fighting doctrine during its first century is curious. Edward S. Farrow's book, *Mountain Scouting: A Handbook for Officers and Soldiers on the Frontiers,* was written to fill the gap. First printed in 1881, the handbook was used during the last decade of the Indian wars. Thereafter, campers and outfitters used it.

The book is of interest today as an example of company-level frontier military procedures. Subjects covered include care of horses and mules, musketry, first aid, tactical marches, camps, tracking, rations, skirmishing, and the Indian character. However, this modern edition fails to note the information that is no longer valid. The book repeats the old saw advising whiskey for snakebite, and the advice about using gunpowder to season meat should warrant a caution note; modern gunpowder might be poisonous.

The chapter on the Indian character provides observations gleaned from Farrow's years in command of Indian Scouts. However, he seems to believe that he has learned all there is to know, assaying a cockiness not uncommon to the era.

A topic that crops up often throughout the book, which makes the book seem disorganized, is the use and care of horses. Horses were the transportation of the time. A modern equivalent would concern helicopters and motor maintenance.

Farrow stresses marksmanship training. The Frontier Army gave little attention to this subject and even less training and ammunition, much to its detriment. The poor performance of Union marksmanship during the Civil War inspired the formation of the National Rifle Association, but the problem persisted.

This book provides a window to what an experienced company-level officer thought important to the Frontier Army. We might learn something from the fact that the same general topics are still of concern over 100 years later.

Kevin L. Jamison, ***Attorney at Law, Gladstone, Missouri***

THE PHILIPPINE WAR, 1899-1902, Brian McAllister Linn, University Press of Kansas, Lawrence, 2000, 434 pages, $39.95.

The Philippine War, 1899-1902, by Brian McAllister Linn, is the first operational history of the Philippine War. Linn covers the war in both its conventional and guerrilla stages and, along with a handful of other specialists, exploits the extensive U.S. archival collections about the Philippines and the war. He chose the book's neutral title to avoid stirring up emotions unnecessarily.

In the book's first part, "The Conventional War, 1899," Linn narrates the sequence of events leading up to U.S. engagement with a Filipino army and the subsequent conduct of conventional operations. He focuses on the nature of the indecision that gripped the U.S. Government about creating an overseas empire, the actions of decisionmakers in Manila, and the ad hoc nature of the commitment. This is coupled with a description of the conventional battles fought, the planning by the U.S. staff, and the logistic problems encountered. Linn narrates the stages of the U.S. buildup, the nature of Filipino opposition and the factions within it, and the composition of the U.S. Army. He makes astute judgments about Filipino and U.S. commanders, the problems they faced, and the measures they took to overcome them. He explains that the balance of forces did not necessarily favor the U.S. Army and that the Filipinos began with advantages they squandered.

In the second part, "The Archipelago, 1900-1902," Linn details U.S. Army counterinsurgency campaigns waged after Filipino conventional forces had been defeated. He shows how the U.S. Army waged a successful war based on policies that combined coercion and reward, repression and civic action, and the ways these worked in different jurisdictions.

Although Linn's concern is the U.S. effort, his judgments of the main Filipino and U.S. historical actors are judicious. He points out that the U.S. Army was composed of three different types of forces: regulars, state volunteers, and U.S. volunteers. All proved adept at fighting a counterguerrilla war. Linn also tells of the Filipino guerrilla organization, its leadership, and the ways it divided itself ethnically and socially at different times on different islands.

In arguments among specialists, questions have been raised over whether the United States won the war or whether the Filipinos lost it. This dispute need only detain specialists; it is sufficient to remark that the U.S. Army was aided by the Filipinos' mistakes.

The Philippine War was the first war during which U.S. soldiers had to cope with tactical, logistic, medical, and communications problems inherent in waging war in the tropics. And, as the most successful conventional and counterguerrilla campaign U.S. forces ever waged, it established the United States in the Philippines until the country was granted independence in 1946.

Once stripped of the ideological baggage that has far too long hindered understanding of it, the Philippine war emerges as a case study of localized guerrilla war and indigenous resistance to foreign rule. Scrutinizing it in all of its complexity offers insight into the conduct of military interventions, civic action, peacekeeping, and stability and support operations. I strongly recommend this book.

Lewis Bernstein, ***Senior Historian, USMSC, Huntsville, Alabama***

A CHAIN OF EVENTS: The Government Cover-up of the Black Hawk Incident and the Friendly Fire Death of Lt. Laura Piper, Joan L. Piper, Brassey's, Dulles, VA, 2000, 320 pages, $23.95.

FRIENDLY FIRE: The Accidental Shootdown of U.S. Blackhawks over Northern Iraq, Scott A. Snook, Princeton University Press, NJ, 2000, 257 pages, $35.00.

On 14 April 1994, the pilots of a pair of U.S. Air Force F-15C Eagle fighters descended below their mandated altitude restriction of 10,000 feet, misidentified two U.S. Army Black Hawk helicopters on a routine mission in the Iraqi northern no-fly zone, and fired on both aircraft without permission. In 10 minutes, 26 people died. In the aftermath of the shootdown, U.S. President William Clinton made a promise to "find the answers to the questions the families so rightfully seek." Unfortunately, the answers to so complex a problem are not so easily determined. Two authors, with widely differing backgrounds and perspectives, set forth to find those answers.

Joan L. Piper, the mother of one of the victims, a grade school teacher from San Antonio, Texas, is married to a career U.S. Air Force (USAF) officer. Her credentials extend far beyond the horizons of a grieving mother. The experiences of 26 years of military service foster a depth of knowledge and understanding with which few can compare. In *A Chain of Events,* she demonstrates a clarity and tenacity of purpose that often belies her tragic loss.

Piper's book is much more than a tale of a mother's grief for her slain child; it is a poignant portrait of a daughter lost and a mother's grim quest for the truth. The book is a gripping story of a woman's search for closure after a tragic loss and a chronicle of a family's battle through the seemingly impenetrable walls of a stalwart bureaucracy. More than anything else, however, the book is an account of the strength and honor of a military family in crisis. Piper's conclusions are emotionally charged, yet nonetheless valid: her story is of a mother's search for an accountability that consistently avoids her grasp.

Lieutenant Colonel Scott A. Snook, a career U.S. Army officer with more than 20 years of military service, is a victim of friendly fire himself, having suffered at the hands of a USAF A-7 fighter during the invasion of Grenada in 1983. A professor in the Department of Behavioral Sciences and Leadership at the U.S. Military Academy at West Point, Snook holds a doctorate in organizational behavior and serves as the director of West Point's Center for Leadership and Organizations Research.

Friendly Fire is a deeply intriguing analysis of a highly complex incident that resulted in needless deaths. In contrast to Piper's humanistic approach, Snook presents a compelling tale of a system gone awry. Drawing on an extensive knowledge of systems theory and

organizational behavior, he weaves an account of an organization on the edge of chaos, a nearly deterministic system ultimately responsible for the resultant loss of life. His conclusions are as disturbing as they are fascinating: an exceptionally reliable system manned by knowledgeable, rational human beings still failed to prevent the incident the organization is designed to forestall. Snook paints a disconcerting picture of the potential pitfalls of organizational complacency that every military professional should take to heart.

Both books are concise, well-written accounts of human tragedies. Piper relates a tale of family, love, and loss. Snook presents a thoroughly analytical, yet exceptionally unambiguous, narrative of the events that ultimately led to the deaths of 26 peacekeepers. Any research into this incident would be incomplete without the information these two authors provide. Military professionals should consider both books as essential reading.

MAJ Steven Leonard, ***USA, Fort Campbell, Kentucky***

AN EMPIRE DIVIDED: The American Revolution and the British Caribbean, Andrew J. O'Shaughnessy, University of Pennsylvania Press, Philadelphia, 2000, 392 pages, $55.00.

In *An Empire Divided: The American Revolution and the British Caribbean*, Andrew O'Shaughnessy contends that other British colonies, in particular the British West Indies, provided the linchpin of British strategy during the American Revolution. Although the "sugar" islands had many citizens who supported the call for independence by mainland colonies, there was little open support for the American Revolution because of reasons of external and internal security. The islanders were more concerned about the potential threat of foreign invasion and occupation or slave revolts.

Drawing on primary and secondary source material, including private correspondence, colonial council and assembly minutes, and the contemporary press, O'Shaughnessy makes clear that the American Revolution was much more than Saratoga, Valley Forge, and Yorktown. *An Empire Divided* convincingly outlines why the British saw Caribbean colonies, not mainland colonies, as the possible primary theater of operations.

Even though "the Caribbean colonies shared to a large degree the essential preconditions of the American Revolution," they did not join in the mainland's rebellion. The island colonies had greater social and financial ties with England than did the mainland colonies and feared slave insurrection. O'Shaughnessy notes, "[I]n 1770, the year of the Boston Massacre, when the army became the chief symbol of tyranny in North America, the British West Indian assemblies" called for more troops to guard against slave rebellions and to increase the size of their garrisons to help deter foreign attacks. "Slavery thus reinforced metropolitan ties and made whites a besieged minority dependent on Britain for their ascendancy." A combination of economics, threat of slave rebellion, and fear of invasion or attack by competing colonial powers kept the sometimes sympathetic British West Indian islands from joining their cousins to the north in their war against English tyranny and taxation.

Although it has been 226 years since the rebellious 13 colonies declared their independence, the debate over why they were successful, or why England was unsuccessful, rages on. To this intellectual inferno, O'Shaughnessy brings a well-organized, thought-provoking, masterly narrative history of the Caribbean side of the story.

Andrew G. Wilson, ***The George Washington University, Washington, D.C.***

THE 21 INDISPENSABLE QUALITIES OF A LEADER: Becoming the Person Others Will Want to Follow, John C. Maxwell, Thomas Nelson Publishers, Nashville, TN, 2000, 156 pages, $14.99.

This short book is one military professionals would do well to read, but only if the reader is willing to conduct the honest introspection essential to the personal application of the qualities listed. Otherwise, the book will be a waste of time because the qualities are presented in only an abbreviated, cursory manner; there is no depth to the definitions of the qualities and only minimum discussion of their application.

The book begins with a discussion of the characteristics of character. Regrettably, definition is sorely lacking. John C. Maxwell uses the words integrity and truth once each, but otherwise he assumes everyone knows what character means. The term has different definitions, and only an accepted definition based on foundational principles can convey Maxwell's meaning.

Maxwell asserts that commitment, charisma, and communication are essential to good leadership, but he fails to acknowledge that these qualities also have inherently negative components. German dictator Adolf Hitler was charismatic and committed, but his actions caused the deaths of millions. Leaders can communicate by extolling and motivating positively those under them, or they can communicate by demanding results through intimidation and fear. Such qualities can only be considered in terms of the leader's character.

Maxwell lists several qualities that every military leader must address. Two of those are initiative and courage. Readers who recall the zero-defects army remember it as being the antipathy of leadership. The mentality that asserts that there will be no mistakes stifles initiative and courage and promotes fear of innovation or seeking the difficult job. The courage to take a risk can bring great reward or great failure. Unless risk-taking is fostered by a leader who encourages innovation and problem solving and is willing to take the responsibility for a subordinate's failure (other qualities Maxwell lists), the organization will stagnate.

This book's value is directly proportional to the reader's honesty. Either it will confirm one's inflated sense of leadership ability, or it will cause the sincere reader to examine his or her leadership qualities. The reader must then be secure, courageous, and reflective enough to develop those areas where he or she finds shortcomings. This book is worth only what the reader is willing to put into it.

Richard L. Kiper, ***Ph.D., Leavenworth, Kansas***

THE FRANCO REGIME 1936-1975, Stanley G. Payne, Phoenix Press, London. Distributed by Sterling Publishing, NY, 2000, 676 pages, $24.95.

Francisco Franco's Falange Party dictatorship in Spain, which arose almost contemporaneously with those of German Nazi Adolf Hitler and Italian Fascist Benito Mussolini, outlasted those leaders by 30 years. In *The Franco Regime,* Stanley G. Payne provides provocative reasons for Franco's longevity.

To place the regime in proper focus, Payne gives an overview of kaleidoscopic Spanish politics beginning with Spain's defeat by U.S. forces during the Spanish-American War in 1898. Payne pays particular attention to Primo de Rivera's dictatorship and the Second Republic.

Franco's rise to power as a fighting general set the stage for the beginning of his dictatorship in 1936. Payne reviews Franco's World War II diplomacy, from the German phase, when soldiers from the Spanish Blue Division fought alongside Nazi troops in Russia, through nonbelligerence, to neutrality. Franco's key concern was the perceived best interest of Spain, much to the frustration of Hitler and other would-be allies.

After World War II, isolated from the West because of fascist tendencies during the conflict, Spain turned inward, emphasizing Catholic religion and seeking ties with Latin America. However, the global conflict against communism soon found Spain back in the community of western nations, demonstrated first by the revocation of a U.N. boycott, then by admission to the United Nations, and finally by a state visit by U.S. President Dwight D. Eisenhower in 1959. The 1960s were marked by yet another shift, as an aging Franco increasingly was surrounded by a bureaucratic elite who forged the 1969 agreement with exiled Spanish heir to the throne Juan Carlos to restore the monarchy after Franco's death.

In an excellent chapter placing events in perspective, Payne notes that despite labeling, the Franco regime was authoritarian, not totalitarian: it did not seek to control all aspects of Spanish life. While noting that despite Franco's personal dictatorship, which allowed limited representation to flower, Payne concludes that it is incorrect to relate Spain's democratic present to its Franco past.

LTC James J. Dunphy, *USAR, Fairfax, Virginia*

HISTORY MAKERS: Interviews, Fred Schultz, ed., Naval Institute Press, Annapolis, MD, 2000, 256 pages, $27.95.

The U.S. Naval Institute publishes *Naval History,* which features interviews with interesting people tied in one way or another to the U.S. Navy or the sea. David McCullough writes about it; Jean-Michel Cousteau lives for it; Ken Burns films it. Many of the interviewees are U.S. Navy or U.S. Marine Corps careerists or veterans. *History Makers*, edited by Fred Schultz, is a collection of some of the better interviews from 1995 through 2000. Interviewees include historians, underwater explorers and exploiters, newsmen, actors and filmmakers, military and political leaders, and a couple of astronauts. Included are Ernest Borgnine, William Crowe, Dick Cheney, Art Buchwald, Tom Brokaw, and Shelby Foote, Jr., among others.

In one of the stronger interviews, pilot and astronaut William F. Readdy talks about his time in the A-6, the Russian space program, his shuttle experiences, and the general development of the U.S. Shuttle Program from a military to a scientific or technical one. He gives his views on the Program's future; mankind's future in space, including the prospects for a manned trip to Mars and Russian-American cooperation; and career prospects in space for today's youth. He also draws an interesting analogy between landing the shuttle and landing on an aircraft carrier.

Sometimes, the interviews end just as they are getting interesting. For some of the lightweights, such as Douglas Fairbanks, Jr., and Ken Burns, the interviews are more than long enough. For Borgnine's war stories and Brokaw's book-marketing words, the length is sufficient.

For a meaningful dialogue with Crowe or Casper Weinberger, the interviews are not long enough. There is always the question unanswered. For example, when Cheney says there has not been a debate or a new rationale for a strong defense since the end of the Cold War, he opens an opportunity to be asked his rationale. Instead the interviewer shifts gears, asking, "[W]hat, if anything, could you have done to keep the A-12 program from being cancelled?" Cheney answers by saying it was not that good of a program because the contractor could not deliver, and the F/A-18 was a better if workaround choice.

Questions are not always worth the space they occupy, especially given the consistent attempt to get at least one anecdote into what might otherwise prove a serious piece. Mostly this collection is an evening's worth of easily digested reading before an undisturbed night's sleep.

Fans of the short interview will enjoy this collection, which serves as an appetizer, a tease, a taste of what a real conversation might be like with a wide variety of navy-related people. Readers who value a well-developed, full-blown essay—something full of the insights and opinions of significant contemporary military leaders—must look elsewhere.

John H. Barnhill, *Ph.D., Tinker Air Force Base, Oklahoma*

THE ORIGINS OF MAJOR WARS, Dale C. Copeland, Cornell University Press, Ithaca, NY, 2000, 311 pages, $45.00.

Dale C. Copeland, a professor of political science at the University of Virginia, defines major wars as high intensity conflicts in which national existence as a great power, if not a sovereign country, is at stake. His is a simple thesis that is not simple minded: from antiquity through World War II, major wars have been a preventive policy by which a government seeks to preserve its military status against a potential rival on the ascent.

The classic case, to which Copeland devotes two chapters, is that of Imperial Germany on the eve of World War I. Although Germany clearly had the best army in the world, it could not match Russia in the realm of potential economic power—land, raw materials, and size of population. If it did not reduce

Russia's capabilities while it still had the capacity, Germany's future would have been dim indeed. Worst of all, in 1914, Germany's future was near-term. Russia's army and economy was modernizing, thanks to French capital investment.

Not willing to select only specific examples that obviously support his general thesis, Copeland takes on the Napoleonic Wars and World War II (Europe), supposedly begun by megalomaniacs wanting to dominate the globe, not simply to protect the temporary status of their nation-states. If Copeland can prove that the actions of French Emperor Napoleon Bonaparte and German dictator Adolf Hitler were essentially defensive and that their wars were preventive, not imperialistic, he could prove his case.

Copeland gives it a good effort, reproducing quotations that proved these leaders' fears of domination, whether by England's commercial power in the 1800s or the Soviet Union's industrial capacity circa the 1930s. One wonders how much this really mattered; it only proves that fear as well as ambition motivated Napoleon and Hitler.

What was truly important was that the only way Napoleon and Hitler could feel safe was to dominate the world. This is preventive, in a sense, but it is also meglomaniacal, but that brings up issues of ideology and personality, which Copeland expressly eliminates. To him, they are irrational factors irrelevant to a theory em-phasizing power ratios and dynamics, particularly how declining nations, motivated by rational self-interest, view rivals moving up the hierarchy of international competition.

Copeland's concluding chapter is far more humble than the bulk of his book. He admits that any particular war has numerous causes, including that of ambition to which he hitherto gave short shrift. I understand that theory puts a premium on simplicity and economy. However, Albert Einstein was a genius because his postulate was both simple and correct: he did not sacrifice one attribute for the other. Yet, Copeland's book is useful. I will never try to analyze the causation of another war without asking which nation, in the midst of a long-term decline, has a rational incentive to start armed conflict now. Is that the whole answer? Of course not, but neither is anything else. Copeland, a first-class mind, recognizes this fact, but he might have paid it a bit more heed.

Michael Pearlman, *Ph.D.*,
Combat Studies Institute,
Fort Leavenworth, Kansas

AMERICA'S ASIAN ALLIANCES, Robert D. Blackwill and Paul Dibb, eds., The MIT Press, Cambridge, MA, 2000, 143 pages, $17.95.

Amid the uncertain and diffuse geopolitical climate, Robert D. Blackwill and Paul Dibb's *America's Asian Alliances* comes at an opportune time to stimulate politicians and academicians to review the ambiguous U.S. foreign policy toward Asia.

The book's first two chapters review the region's geopolitical background and sketch the extent of U.S. involvement in Asia since 1900. Blackwill and Dibbs concisely summarize the short-term strategic outlook for this highly diverse region by subregions, then identify potential flashpoints and how these have evolved.

The book examines U.S. alliances with Japan, South Korea, and Australia. While analysts detail the conditions that spawned each alliance, they express surprise at how little each alliance has evolved to meet new challenges in the regions. Analysts believe that in order to remain relevant there is a need to reexamine the costs and benefits of maintaining alliances amid the changing geopolitical climate. Where costs clearly outweigh benefits, such as with Japan, there is a need to renegotiate the alliance. The essayists recognize that the United States' unilateral approach toward many regional issues, without consulting its alliance partners, tends to undermine the alliance's essence. Alliance partners should be proactive and coordinated to shape U.S. assessments and actions in the region, especially toward China and regional crises.

Blackwill feels that the relevance of the three bilateral alliances and enhanced cooperation between the four nations remains critical and that it is necessary to reinvigorate and improve their effectiveness. Policy prescriptions should be directed at strengthening, coordinating, harmonizing, and synchronizing alliances, policies, and actions in dealing with the many issues the Asia region presents, particularly toward regional crises, China's rising prominence, and the developments on the Korean peninsula. There is no one sure-win policy that can be applied across the board. The key to retaining the relevance of alliances is coordination.

The book's value lies in its ability to give readers an appreciation of the difficulties that face the United States and its alliances when dealing with the highly diverse issues in Asia. I strongly recommend this book to all military professionals, especially Asian foreign area officers and regional military personnel who would like to have an unbiased yet comprehensive overview of the region's dynamics, complexities, and diversities as they relate to the formulation of comprehensive and consistent strategic policies for the region.

MAJ Kelvin Koh, *SC*,
Singapore Armed Forces

FROM SURPRISE TO RECKONING: *The Kargil Review Committee Report,* Sage Publications, Thousand Oaks, CA, 2000, 277 pages, $39.95.

India-Pakistan—perhaps nowhere else on earth does the risk of nuclear war run so high. Yet, in 1999, this did not deter Pakistan from infiltrating an estimated 1,500 to 2,400 regular and irregular forces into the Kargil District of Ladakh in Jammu and Kashmir. The Indian Army and Air Force suffered over 1,500 casualties before compelling the Pakistanis to quit the fight. In the aftermath of this conflict, the Indian Government established a committee to review the sequence of events leading up to the incursion and to recommend measures to safeguard against similar armed intrusions in the future. The interested strategist, however, discerns a larger issue here: what possible strategy was Pakistan pursuing that would cause such a bold move? *From Surprise to Reckoning* addresses this question from an Indian perspective and raises the

unsettling prospect that nuclear weapons can serve as a rationale for, rather than a deterrent against, armed conflict.

From Surprise to Reckoning maintains that Pakistan's motivation for its move into Kargil was to project Kashmir as a nuclear flashpoint in hopes of internationalizing the conflict. Given the heightened state of international sensitivities following the successful 1998 Pakistani and Indian nuclear tests, the timing for such a plan could not have been better. The Pakistani objective was to convince the international community to intervene—the earlier, the better. Under this scenario, Pakistan would have retained at least some of its gains and thereby been able to bargain from a position of strength. The most frightening aspect of this strategy was that Pakistan felt emboldened to attempt it because it believed its own nuclear capability would restrain the Indian response. Needless to say, a dangerous precedent would have been set had events played out in Pakistan's favor.

The report provides an unexpectedly candid assessment of the total failure of India's intelligence services to detect any indications of the Pakistani infiltration. The Indians were caught completely off-guard because they lacked adequate intelligence capabilities, specifically, high-resolution imagery satellites and high-altitude unmanned aerial vehicles. Of greater significance, however, is that the Indians had developed a mindset about the nature and extent of the Pakistani threat in the Kargil sector. All the observed Pakistani activity was viewed within this context: the Indians simply did not believe military intrusion was sustainable in this sector. This probably had as much to do with their overall intelligence failure as did their lack of state-of-the-art sensors.

I highly recommend *From Surprise to Reckoning* to military strategists. Admittedly, it gives only one side of the story; the Pakistani version would undoubtedly read much differently. Nevertheless, the report provides an excellent overview of all aspects relevant to this brief conflict. The discussion of Pakistan's overall strategy for playing the nuclear card in Kashmir is thought-provoking, albeit a bit repetitive.

Any strategist interested in studying a real-world example of an information operations (IO) campaign would be well advised to read this report. There is no doubt the Pakistanis developed and implemented an extremely sophisticated and integrated IO plan for Kashmir. Based on the recommendations the committee outlines, it appears the Indians are now moving in a similar direction.

MAJ Randall J. Welp, *USA,*
Fort Leavenworth, Kansas

THE FUTURE OF TERRORISM,
Maxwell Taylor and John Horgan, eds., Frank Cass Publishers. Distributed by International Specialized Book Services, Inc., Portland, OR, 2000, 234 pages, $24.50.

The Future of Terrorism contains essays submitted at the conference for Future Developments in Terrorism, in Cork, Ireland, in March 1999. The central thesis that resonates in the editor's introduction and individual essays is that terrorism has evolved beyond the traditional view of state-sponsored organizations that commit acts of violence as an expression of nationalism. Terrorist organizations are now more complex, and their motivations stem from a more diverse range of ideologies. Two supporting views that the essayists submit that have significant value to military and civilian strategists expound on terrorists' use of weapons of mass destruction (WMD) and the emergence of terrorists as transnational actors.

As with many nations and various legitimate organizations, the end of the Cold War caused most terrorist organizations to change their modus operandi to guarantee survival. The authors and editors of *The Future of Terrorism* support this argument by discussing the decline of state-sponsored terrorism, facilitated against the back-drop of the post-Cold War; increases in intrastate terrorist organizations; the blurring of distinctions between terrorism and organized crime; and the emergence of organizations with motives based on extremism and religion. In fact, lawmakers can link terrorist organizations to crimes such as extortion and bank robbery. The commitment of terrorism for monetary gain represents a significant shift from terrorism connected to ideologies.

The shift away from strong ideological motivations also affects potential WMD use. For a terrorist organization to use WMD, its belief in ideology must surpass its sense of survival. Using a WMD could enrage

world opinion and lead to the organization's destruction. This runs contrary to the beliefs of many security analysts, who cite the 1995 use of a nerve agent in a Tokyo subway as a sign of future use.

The emergence of terrorists as transnational actors is a recent phenomenon. Transnationalism is a term used to describe organizations that operate internationally but do so without state sponsorship or direction. The end of the Cold War opened the way for some terrorist organizations to expand their area of operations. This expansion, because of logistics and financial support, made coordination between the various organizations a necessity. Osama bin Laden is a good example of a transnational terrorist. He has links to several states in the Middle East and Africa as well as ties to other terrorist organizations. The ability to move in and out of different circles, similar to guests at a garden party, makes prediction of terrorist strikes extremely difficult.

This thought-provoking book provides valuable insight into the complexity of terrorist organizations and their evolution. I highly recommend it.

MAJ Steven M. North, *USA,*
Fort Leavenworth, Kansas

NATIVE VS. SETTLER: Ethnic Conflict in Israel/Palestine, Northern Ireland, and South Africa, Thomas G. Mitchell, Greenwood Press, Westport, CT, 2000, 243 pages, $69.95.

In his first book, *Native vs. Settler: Ethnic Conflict in Israel/Palestine, Northern Ireland, and South Africa,* Thomas G. Mitchell compares and defines the basic roots and characteristics of three classic conflicts and insurgency movements—those of Israel and Palestine, Northern Ireland, and South Africa. Mitchell, an independent researcher who studied in Israel and Ireland and traveled extensively in South Africa, compiles 12 years of research into a comparison work in which he seeks to identify key elements common in each case study. His key thesis is that settler conflict—pitting a settling population as part of a colonization effort against a native population—begins and evolves in a loosely definable pattern.

The military strategist will find utility in Mitchell's work for two reasons. First, Mitchell outlines concise histories and the politics and ideologies driving the conflicts in Ireland, Israel, and South Africa. Second, without taking sides, he describes the evolution of these conflicts, comparing characteristics of each. These common characteristics, on cautious reflection, might be applied universally as the strategist attempts to understand the dynamics fueling conflicts in areas where U.S. or UN forces must conduct peace enforcement or peacekeeping missions. At the least, Mitchell raises questions each of us can ask while developing and examining courses of action for such missions.

In each case study, Mitchell compares and contrasts such subjects as democracy, or the degree of liberal democracy; cultural institutions; political and cultural mythology; motives; settler assimilation and native liberation movements; and counterterrorism or counterinsurgency campaigns. He takes critical aim at each side's often less than stellar terroristic or oppressive tactics and human rights records and follows to ground the effect of these tactics in prolonging settler conflicts.

Identifying popular political myths and their role in solidifying popular support on both sides of the issue, Mitchell frames the manner in which settler conflicts continue to fuel themselves. Realizing that external factors and internal splinter group extremism affect such conflicts significantly, Mitchell examines these forces, their goals, and the repercussions of their actions.

MAJ Wendul Hagler, *USA,*
Arlington, Virginia

DEADLY SKY: The American Combat Airman in World War II, John C. McManus, Presidio Press, Novato, CA, 2000, 435 pages, $32.95.

Deadly Sky: The American Combat Airman in World War II, by John C. McManus, is the account of combat aircrews of all services as told in their own words. Occasionally, collections of reminisces are suspect because of what can happen to memory during the time between events and the retelling. However, McManus injects enough historical research to build a context for the veterans' anecdotes.

McManus is to be commended for the organization of his material. He follows a logical sequence beginning with the backgrounds of the principle contributors and of U.S. airmen in general. From there he follows them through training, first assignments, vagaries of the different theaters, flying missions, and ends with the men's reflections on the war and their comrades.

In the last chapter McManus analyzes why and what the airmen fought for. Almost to a man they said it was for the other members of the crew or squadron. In other words, they did not want to be found wanting in the eyes of their peers. In an interesting parallel, when ground combat soldiers are asked the same question the answer is invariably the same. I suspect this says more about the universality of warriors than anything in particular about U.S. airmen.

The only fault with McManus' work would be the overabundance of bomber crew stories and in particular those of the Eighth Air Force, which was stationed in England. Granted, the air campaign against Germany was the focal point of the U.S. air war during World War II, but a few more anecdotes from the other services or theaters would have given the book more depth.

LTC M.R. Pierce, *USA,*
Fort Leavenworth, Kansas

CUSTER: Cavalier in Buckskin, Robert M. Utley, University of Oklahoma Press, Norman, 2001, 256 pages, $29.95.

Historian Robert M. Utley has published several works about the life and times of George Armstrong Custer. In those books, Utley did much to reveal the almost mythical figure and define him as person, husband, and soldier. The begging question 12 years later is simply, what has changed? To be short, enough to justify a revised edition.

In this 2001 edition of *Custer: Cavalier in Buckskin,* Utley reopens the issue of Custer and attempts to refine his thoughts as they bear on the intriguing events of June 1876.

What marks this edition from previous work is the assimilation of information, scholarship, and the significant developments in archeology since 1989.

The Little Bighorn Battlefield has always been of considerable interest to historians because it is physically unique: the sites where Custer's men died are generally marked where soldiers fell. Even 100 years later this recording of battlefield dead demands from all who observe it interpretation and analysis.

A grass fire on the battlefield in the 1980s and subsequent rains exposed new artifacts, which prompted an ambitious and compelling subsurface archeological survey. The results of that survey have challenged many of the commonly held beliefs, some Utley's, of what occurred there. Utley is quick to recognize and credit those involved in the work that has shaped his refined opinions. This book lays a strong foundation for further research on the subject.

MAJ Ted J. Behncke, *USA,*
Fort Leavenworth, Kansas

DIARY OF A DIRTY LITTLE WAR: The Spanish-American War of 1898, Harvey Rosenfeld, Praeger Publishing, Westport, CT, 2000, 207 pages, $57.95.

Harvey Rosenfeld seems to presume that writing history means piecing together instances in time. Perhaps because he has never realized that good history is much more, this book fails to get off the ground. The liner notes promise "experiences of the Jewish and black communities in the war" and "extensive reports of land battles." Unfortunately, these are absent. Rosenfeld analyzes the Spanish-American War as a conflict where disease runs rampant and living conditions are atrocious.

Because the book is written chronologically in a day-by-day diary format, it is fast-paced; however, this leads to confusion. Various threads have no continuity, and there is no analysis, partially because the book is written as though the events were happening in the present. There are also several misspellings and misprints.

Another problem is historical error. One example is the identification of James Longstreet as a brigadier general. The highest rank Longstreet held was major. In the Confederate Army, Longstreet attained a corps commander position and held the rank of lieutenant general. This might seem insignificant, but it is imperative when writing a factual account that all facts be true.

Overall, Rosenfeld promises much but fails to deliver. Other one-volume works are much more comprehensive, and they come more highly recommended.

SPEC David J. Schepp, *USA,*
Fort Benning, Georgia

HOT SHOTS: An Oral History of the Air Force Combat Pilots of the Korean War, Jennie Ethel Chancey and William R. Forstchen, eds., HarperCollins Publishers, NY, 2000, 240 pages, $25.00.

Hot Shots will thrill aviation lovers. I knew this book was good by page 2 because that is where combat begins. But I really fell in love with the book on page 15 when a Korean War pilot told his story of landing at an unpaved field to live, work, and fly P-51s with minimal support and only tents for buildings. From that beginning, the stories cover a range of subjects from combat scenes to a detailed account of a pilot prisoner of war held in China after the war was over. The tales are from the prop age to the jet age.

While the book gives details about the aircraft, the pilots are the heroes, and the editors allow the aces to tell their stories in their own words. The editors also know that readers want action, and they provide it.

MAJ Herman Reinhold, *USAF,*
Yokota Air Base, Japan

FLAGS OF OUR FATHERS, James Bradley with Ron Powers, Bantam Books, NY, 2000, 384 pages, $24.95.

I did not know that one of the people in the famous flag-raising photo from Iwo Jima was a Navy Corpsman. I did not know that one of the people in that famous photo was a Native American. I did not know that only three of the people in the photo survived the fight: they died even though President Franklin D. Roosevelt issued a confidential order to have the six men who raised the flag transferred back to the United States. In fact, the point of *Flags of our Fathers* is that the figures in the photo were real soldiers. If the photo is awesome, so was the price that was paid for it.

During the battle for Iwo Jima, Lieutenant Colonel Chandler Johnson saw, after four days of fighting, that it was possible to get a platoon to the top of the mountain that dominated the island. First Lieutenant H. George Schrier from Easy Company led a patrol up Mount Suribachi. Johnson handed a small U.S. flag to Schrier and told him to put it up if he got to the top.

As Schrier's patrol was raising the flag, Secretary of the Navy James Forrestal was coming ashore. On seeing the flag waving atop the mountain, Forrestal commented that the flag raising guaranteed a U.S. Marine Corps for at least 500 years. He decided he wanted the flag as a souvenir. When Johnson heard of Forrestal's request for the flag, he was furious; the flag belonged to the battalion. Johnson sent Lieutenant Ted Tuttle to the beach to secure a larger flag to replace the one that had been raised.

As Tuttle searched for a flag, a detail was formed to run a communications wire to the top of the mountain. Five men were selected. Just before they departed they were handed a flag and told to put it up and retrieve the original one for Johnson. The men reached the top of the mountain around noon.

Photojournalist Joe Rosenthal snapped the photo on 23 February 1945. He heard that a flag had been raised on Suribachi on Iwo Jima. Although he had been told that he would not be able to get a photo of the actual flag raising, he wanted to go anyway. Rosenthal and two other photographers reached the top just after the detail. Out of the corner of his eye, Rosenthal saw movement. He turned, raised his camera, and snapped the picture that is probably the most famous combat photo ever taken.

I purposely left the names of the six men out of this review. I cannot do them justice in such a short note. While reading this book, I realized

the intensity of the human element of combat. Stephen Ambrose feels it is the best battle book he has ever read. I have not read as much as Ambrose, nor have I ever even attempted to write a book about battle, so I am left to merely agree with his comment. This is the best battle book I have ever read.

MAJ John W. Amberg II, *USA,*
Fort Leavenworth, Kansas

THE INVENTION OF PEACE: Reflections on War and the International Order, Michael Howard, Yale University Press, New Haven, CT, 2001, 113 pages, $15.00.

Michael Howard has undertaken to explain why war has been a "universal norm in human history" and to assess the prospects for creating a peaceful world order. He discusses wars from medieval times to the present, including such related issues as class structure, religion, political economy, just war, and collective security. Proceeding through history, Howard finds war to be caused alternately by class struggle, Hegelian desire to prove the fitness of the state, patriotic zeal, and ideological difference. Ultimately, he concludes that universal peace requires cultural homogeneity, including a common language, political cohesion, a "freely accepted framework of law," universal education, and "a highly qualified elite, capable not only of operating their complex legal, commercial, and administrative systems, but of exercising considerable moral authority over the rest of society."

This ambitious work by a great military historian attempts to cover too much ground for a 113-page monograph and, thus, provides little insight: it is a distillation of material well known to those who study the subject. The book is totally devoid of theory. Immanuel Kant's idea that peace can be established through a league of republican states is used as a loose theme for the study, but Howard makes no reference to any of the vast literature on this subject. Indeed, there are no footnotes or references of any kind. While the book is unsatisfying, it is enjoyable to read and is a useful primer for beginners, although less so than perhaps a dozen other works.

James H. Joyner, Jr., *Ph.D., Troy*
State University, Alabama

Virtual Officers' Club:

CompanyCommand.com

Patrick A. Swan

On a small budget of $20 a month, plus "lots of time and sweat," two U.S. Army officers have established a virtual officer' club that has earned them a place on Fast Company magazine's "champions of innovation" list. William C. Taylor and Alan M. Webber, Fast Company founding editors, said their goal in establishing the Champions of Innovation recognition award is to "remind the world of all the good that gets created when passionate people with big ideas and strong convictions are determined to make a difference . . . , to unleash the spirit of innovation, creativity, determination, and struggle that moves the world forward, and to recognize leaders, teams, and companies that are achieving extraordinary results."

Majors Nate Allen and Tony Burgess were recognized for creating CompanyCommand.com and PlatoonLeader.org. The fast-growing, user-driven web sites have attracted over 30,000 visitors and 1.5 million hits monthly.

According to Allen, the sites "are forums where Army leaders share knowledge and learn from others' experience. Leaders are accessing knowledge, sharing ideas, and tapping into the experiences of others, helping to transform the Army into a learning organization."

In addition to leading the all-volunteer team of 25 officers who run the web sites, Allen and Burgess have published a book on company-level leadership, publish a monthly company-level leadership newsletter, and give leadership seminars at pre-command courses. Burgess said, "What we are doing is not about a web site; it is about connecting like-minded leaders who are passionate about building combat-ready teams." Burgess told Fast Company that although all Army officers—literally thousands each year—lead platoons or command companies, there was no system that allowed them to share in real time what they were learning laterally across the entire organization. When they left their jobs, so did their experience. The websites provide a way to capture and share that experience and to create new knowledge through online discussion forums. "The Internet makes possible a virtual officers' club," said Major Steve Schweitzer, the site's webmaster. "We [can] offer a non-time-sensitive, non-location-dependent discussion forum that soldiers can access from anywhere in the world."

At the recent Army Knowledge Symposium, Allen and Burgess also were recognized for the "Most Innovative Knowledge Management Initiative" for their work on building CompanyCommand.com. Burgess is not surprised by the site's success: "It makes sense that Army leaders would be passionately committed to figuring out and sharing what works. We knew that if Army leaders could easily share their ideas and lessons-learned in real time, they would enthusiastically do so."

Allen and Burgess feel limited only by the resources they can dedicate to the effort: "Pulling this off with no funding other than our savings accounts and on our free time has definitely been our biggest obstacle. On the other hand, the fact that our work is totally grass-roots has created a spirit of community that is downright inspirational."

Allen and Burgess believe that their efforts support the leader development portion of Army transformation: "The potential to leverage this model of learning to effect Army transformation is huge. Leaders who come together to share knowledge can more quickly learn what they need to know, when they need to know it, making them more competent and adaptive." Burgess added, "It's all about building combat-ready teams."

Editor's note:
This article is adapted from the Army News Service article "Army Officers Recognized as Champions of Innovation," 8 April 2002. Patrick A. Swan is a public affairs liaison officer with the Chief Information Officer/G6.