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From the Editor

Transformation headlines this issue of *Military Review*, just as it consumes thinkers, planners and analysts inside and outside the Army. Will the US Army retain the world's premier heavy forces? Will tracked vehicles have a place in a "lighter, more lethal" service? Are strategic and tactical airlift capabilities aligned with the vision for ground technologies?

Understanding both the contemporary and the historical contexts for transformation is fundamental to visualizing the Army's future organization, equipment and missions. Articles in the lead section describe the landscape and also emphasize the constant imperatives of close combat and leader development.

Transformation extends beyond hardware, software and sinew. Without aligning the Reserve Component forces organizationally and exploiting them operationally, the Army cannot achieve full-spectrum dominance. Unless pre-positioned equipment properly complements strategic lift, the concept of power projection lacks real-world responsiveness. And until the Army recruits and retains enough quality soldiers, manpower will constrain the military's support of national security policy.

Even once soldiers, equipment and organizations are in place to meet emerging challenges, leaders will still struggle with age-old unit problems such as stress, fatigue and disease —and that's before considering the high-stakes complexity of traditional combat or burgeoning asymmetric threats. Welcome to the 21st Century.

Authors in this issue consider these wide-ranging concerns. And as always, the nation looks to its leaders for answers. If you don't have solutions right now, read on. If the Army does not successfully engage these dragons, it will be implementing someone else's ideas soon.

Let us know what you are thinking.

LJH

TRANSFORMATION

The Army's unclear future reflects the uneasy global security environment. This much is certain: The Army must be more responsive across the spectrum of conflict and military operations other than war. Huba Wass de Czege and Antulio Echevarria explain the imperatives for a strategically agile force. However, Wass de Czege emphasizes that the shift from Cold-War forward presence to power projection embeds the nonnegotiable requirement to master close combat. Leaders, not technology, are the heart of warfighting readiness and interwar transformation, so leader development is especially critical today, as Jon Moilanen and Donald Craig explain. And lest we think that senior leaders are moving too far too quickly, historians from CGSC's Combat Studies Institute trace similar restructuring initiatives over the past 60 years and show the continual change in the modern US Army.





3 Insights for a Power-Projection Army

by Brigadier General Huba Wass de Czege, US Army, Retired, and Lieutenant Colonel Antulio J. Echevarria II, US Army

The big difference between the Army and the Marine Corps is scale: while the US Marine Corps (USMC) projects brigades to a crisis, the Army projects corps—plural. To create a force-projection "objective-force," the Army will require a great deal more than lighter combat vehicles and more strategic lift.¹ These are just the beginning. This article discusses a number of insights, developed in the course of the Army After Next war games, the Navy's series of "global" war games and the Air Force's Future Warfare series, which appear relevant to a power-projection force.

Numerous analyses, such as the National Security Study Group's *New World Coming* and the Army's *Knowledge & Speed* (I & II), have identified the need for a power-projection force capable of doing more than halting an adversary's aggression—as the US Air Force (USAF) proposes— or controlling his forces within 200 kilometers of the shoreline—a capability that the US Marine Corps provides. Likewise, the projection of credible and decisive power will require more than a few light or airborne forces. To influence even modest regional adversaries, the United States will need the ability to deploy a large, coherent force with a variety of capabilities. Those capabilities, discussed in greater detail later in this article, must address the broad spectrum of missions listed in the figure below.

Peace	Crisis	War
Collective security exercises	Counter-proliferation interventions (Iraq 98)	Entry operations (seize, secure, and protect points of entry, etc.)
Stability operations	Counter-genocide interventions (Kosovo 99)	Decisive operations (defeat enemy forces)
Peacekeeping	Counter-crime interventions (Panama 90)	Stability operations (restore civil authority)
Peace enforcement	Counter-crime interventions (Panama 90)	
Arms control verification	Counter-aggression interventions (Iraq 90)	
Support operations	Deterrent deployments	
Facilitate non-combatant evacuations	Stand-off support (information, long-range precision fires, air defense)	
Secure humanitarian relief efforts	Other	
Anti-crime support		

Probable Range of Missions

For the foreseeable future, the bulk of our power-projection forces will have to deploy from the Continental United States.

Forward-presence forces will seldom be at the site of crisis or, if they are, they will likely already have significant commitments to peacetime engagement activities. Regardless of the mission those forces must perform, the

ultimate measure of military effectiveness will remain control of population and territory—a fact that makes Army tactical formations indispensable to any successful power-projection strategy. As history and numerous high-caliber war games have shown, ground maneuver and lethal firepower are not fungible (interchangeable). The ability to exploit the effects of lethal fires with ground maneuver is vital to tactical success and ultimately to operational and strategic victory.

Success in the projected range of missions requires projecting power to put "boots on the ground." US military forces will not want for lethal (or nonlethal) firepower in the next quarter century. Lethal technologies are advancing rapidly, and it is becoming easier to reinforce the fires of ground formations with USAF and US Navy long-range fires. However, the Department of Defense (DOD) and other responsible agencies must make a conscious effort to maximize the number of future combat vehicles and soldiers available to exploit lethality and control events on the ground. This maneuver density is the Army's unique contribution to the warfighting equation and to missions short of war. It enables the command to exploit long-range precision lethality, decisively defeat enemy formations, seize and retain territory and control populations. That density is also indispensable in urban combat and stability operations, which are both very "people intensive" undertakings.

Getting to the Crisis Area

The following insights pertain to the problem of getting power—combat, combat support (CS) and combat service support (CSS) capabilities—to the crisis area. "Getting there" has been the Army's most difficult challenge since the 19th century. Current international trends and the Army's own recent introspection underscore the importance of addressing this problem quickly. The discussion below is intended to contribute to meeting that challenge.

Lift and organizational design. DOD must expand the amount of air- and sealift available for military purposes. However, maximizing strategic responsiveness first requires creating formations that fit existing strategic, operational and tactical lift parameters. Sizing organizational equipment to fit available lift parameters would increase the combat value of each ton moved, and would increase the amount of civilian cargo airlift and sealift which could be made available through an expansion of Civil Reserve Air Fleet (CRAF) and CRAF-like arrangements applied to oceangoing cargo vessels.² The Army's current efforts to acquire lighter, more transportable vehicles are important steps in the right direction. But our efforts toward a lighter, more compact force should not be limited to combat arms battalions and brigades. Army power projection requires the strategic and operational movement of large amounts of CS and CSS capability. Crisis-response operations often require vital CS and CSS organizations even before the tactical organizations the Army is now so focused on. The corps and divisional support structure contains many heavy vehicles and unwieldy equipment which were designed to move from the motor pools of Germany to the general defense positions of the Cold War. Signal companies, air defense batteries and military intelligence battalions are based on technologies that are rapidly shrinking in size while geometrically advancing in potential. Some of this equipment must be rapidly transportable by air. For instance, future air and missile defense weapons should be a fraction of Patriot's size to deploy more compactly on far less lift.



Soldiers and civilian contractors prepare an Armored Gun System (AGS) with Level II armor for live fire at Fort Knox, Kentucky.

Single-mode transport. Multimode transport consumes valuable time, resources and invites interdiction.

Transport mode changes, such as truck to rail and rail to ship, involve a significant portion of the total deployment time and increase the probability that friction will undercut or thwart the mission. Ideally, self-deployable units could deploy directly from the United States into tactical positions overseas for operational and strategic surprise. Even if the need for ports, airfields and elaborate reception, staging, onward-movement and integration (RSOI) procedures cannot be eliminated altogether, minimizing dependence upon them will enable a crisis-response force to increase its operational and strategic speed dramatically.

Reduced logistical consumption. Current trends suggest possible logistic savings in several areas:

- *Mobility*—reduce the bulk and weight of fuel and the requirement to have maintenance repair parts on hand;
- *Lethality and suppression*—reduce the weight and bulk associated with killing and neutralizing power; and
- *Protection*—remove forces requiring protection from theater.

Such measures to reduce the logistic footprint significantly must still balance against the risk of losing contact between deployed and supporting forces. A proactive enemy will target the cyber links that are necessary to build and sustain combat power. Shortened campaign lengths can also reduce the logistic burden, although high-intensity conflicts, even of short duration, can devour resources. The key to winning such short, high-intensity operations is having sufficient stores on hand to execute them without resorting to full-scale mobilization and in time to protect the arrival of other crisis-response forces.

Teams of teams: cohesion and modularity. The expected frequency of short-notice missions will require flexible, combined-arms teams of teams that have trained as they are expected to fight. "Pick-up teams" have become the norm for crisis-response and other missions, but they violate every principle underlying cohesion and organizational effectiveness. As future potential enemies modernize and learn, the price for violating these principles rises. And as technological capabilities enhance the combat potential of our organizations, teamwork and cohesion become more important in employing that new potential fully. Finally, required response times are likely to decrease. Our contingency forces have traditionally task organized into battalion and brigade task forces for deployment. One combat-ready battalion or brigade task force on the ground immediately may be worth five later. Evidence suggests that it will be even more important to deploy a power-projection corps in tailored combined arms packages. These packages of brigade or regimental size may contain the slice of divisional and corps support that enables nearly immediate action. In getting there "firstest with the mostest," what really counts are the closure times of coherent combat-ready combined arms packages—not their usual command relationships.

Modularity is a necessary evil. Real situations never match those envisioned by the people who design organizations. While soldiers prefer to deploy and fight under their parent headquarters, it is not always possible to do so. The challenge is maintaining core stability among those elements of a combined arms organization where teamwork is most important—and flexibility to tailor forces for specific missions. This is the classic tension between effectiveness and efficiency. Our organizational design schemes from corps on down need thorough review. Initial insights about the impact of emerging technologies on organizational design suggest removing at least one echelon to create organizations with wider spans of control. Further, each of these lesser number of echelons should be organized with a combined arms core for teamwork, effectiveness, organizational resiliency and deployment packaging.

The Army must determine at what level cohesion is inviolable and then build its power-projection capability upon that. Future teams of teams will require organic integrity and command elasticity to enter combat and noncombat situations under a variety of commands. Planners must identify appropriate combined arms packages for every combat level and establish a system for building these teams of teams. Likewise, the Army must develop a corresponding system for doing two fundamental things. Commanders at each level must have the capabilities they need to set the conditions for their subordinates' success. They must also have the capabilities to weight subordinates' efforts appropriately by reinforcing those teams' organic capabilities with reach-back and other external assistance.

Arriving with the Requisite Capabilities

Beyond challenges to getting there lie the challenges of organization and equipment once in theater. Numerous futuristic studies indicate that the broad and difficult spectrum of mission requirements described earlier will potentially require a number of tactical capabilities that apply broadly to the force as a whole.

Sustained protection capability. From the homeland to the front lines, Americans will have to guard against a growing array of possible attacks at every important facility. As a number of studies have indicated, no real sanctuary will exist for friendly forces. Once in theater, forces will have to disperse for protection against long-range precision fires. However, small enemy regular and irregular ground forces will be able to move among our scattered forces more freely. Sustained protection of command and control (C²), CS and CSS operations in a dispersed battle space will require new measures. A capable enemy will always seek to divert combat formations to protection activities. Occupying predictable support locations—ports, airfields and railheads—and remaining in any location long enough for the enemy to find and target our assets will bear a penalty. Decreasing operational predictability and dwell times at permanent bases will require flexible and mobile support organizations. Future organizations from corps on down will need to provide for greater self-protection, either by creating more-capable organizations or by augmenting them with specially tailored security forces.

Isolated operations capability. Wargames have shown that discontinuous logistic operations will be the norm rather than the exception. The expanded frontages, greater depth and dispersion that will characterize the future battle space will also complicate logistics. Maintaining continuous and secure lines of communications to forward tactical organizations might prove impractical. Therefore, units must have the capability—whether through reductions of material or other means—to operate for prolonged periods without resupply. Consequently, reach-back support will not entirely eliminate the need for combat formations to carry logistics packages. In addition, combat operations will have to generate and sustain a battle rhythm that creates specific opportunities for logistic operations.

Organizational resilience. Organizations that deploy to a crisis area must suffer losses gracefully and avoid sudden, catastrophic failures. While reach-back capabilities and similar streamlining measures are a key principle in strategic deployability, redundancies and compensating capabilities make units robust. According to current orthodoxies, dependence upon outside support would increase as mission difficulty increases, and organizations would progressively absorb the support of higher levels of command. This means that reach-back support is layered on top of organic capabilities to add weight to a subordinate's effort to reflect both the difficulty and importance of the mission assigned. However, organizations must include enough redundancy—yes, additional weight and bulk—so that if they are cut off from outside support, their organic systems will at least permit effective self-defense.

In addition to the general capabilities outlined above, the force as a whole will potentially require a number of additional important tactical capabilities. All of these capabilities are required in any crisis, that escalates to major theater war against even a middle grade power. Whether those capabilities can reside in a fairly homogeneously organized army of nearly identical divisions or one requiring several different kinds of divisions is not clear. Several capabilities could reside within the same organizational design.

Crisis response capabilities. When responding to crisis, hours matter. One soldier early is better than five later. Studies have shown that putting a large, coherent force on the ground quickly offers a number

of strategic and psychological advantages. During the early stages of a crisis, being able to reinforce the defenses of an ally can foreclose a potential aggressor's options. If deterrence fails, then being able to secure and defend areas and facilities vital for rapid force buildup and maneuver by follow-on forces could be the difference between a short, decisive campaign and a protracted one. Speed is the major, irreplaceable concern: although light and compact force packages have limited offensive capability, they have tremendous deterrent and defensive potential.

A portion of this force will require only the capability to defend static facilities and locations. It will need to use terrain for protection and keep the enemy at arms length with long-range precision fires and robust reconnaissance, surveillance and target acquisition. A future 82nd Airborne Division equipped with modern lethality and situational awareness, using space-frame vehicles specially designed for compact air movement, could be capable of much shorter closure times than current light or airborne forces, with several times the combat power within that mission niche.

Some crisis-response forces will need greater mobility and protection to expand the defended space and provide flexibility, screening capability and some limited offensive potential. Putting mobile protected forces on the ground, even against overwhelming forces, multiplies the effectiveness of air interdiction many times. Protection and lethality in air transportable vehicles are improving rapidly—the current aim of the Army is to achieve a future combat system at about 20 tons.

Both the light and mid-range crisis-response forces need to be capable of insertion without airfields—eventually, without intermediate staging operations. The lighter force could still retain a parachute-entry capability. But both need to be delivered by air land or air assault operations close to their operating areas to save time and provide protection. Future air land operations should be able to use roads and short fields for take off and landing. Future Army air assault operations will require the ability to deliver fighting vehicles and support small landing zones. The Army Science Board has recommended that the follow-on to the CH-47 Chinook helicopter, the Joint Transport Rotorcraft, have a 20-ton capacity.

Army Chief of Staff General Eric K. Shinseki has stated the goal of closing a brigade in 96 hours and a division in 120 hours. Even if this is not sufficiently fast, it is a good first mark. Much of today's focus is on the deployment of the initial brigade combat team (IBCT) in 96 hours. Obviously, more of a future airborne division as described previously could be transported with the lift required for the IBCT. Fitting the right force mix to the mission will get troops into theater using the time and lift assets available.

Decisive campaign fighting capabilities. Being able to project a crisis-response force, even a robust one, does little good if the main body of the campaign forces is not closely on its heels. Once the crisis-response forces have guaranteed points of entry and some maneuver space for the campaign forces, then the requirements change from deterrence, condition setting and defense to offense. The forces which bring these capabilities will more than likely arrive by increasingly faster sealift. The individual fighting vehicles will no longer necessarily be subject to the same strict airlift constraints as the crisis-response forces. The operational commander will require tactical combined arms maneuver formations possessing greater offensive lethality and protection in all types of terrain and fighting conditions. While defensive, delaying and limited offensive operations make better use of standoff fighting, campaign forces can fight under all conditions.

Time is a critical commodity at all levels of war and the enemy is more likely to quit sooner than later if he is also faced with a strong and credible offensive close combat effort. Close combat may be the only

way to insure a decisive outcome. In engagements, battles or campaigns fought with standoff means, it is difficult to know whether you have really won and whether populations and facilities are secured. This uncertainty slows offensive action. Rapid and decisive offensive fighting in mixed and open terrain will require greater protection, lethality and mobility than even today's armor forces can provide. These forces must be able to project more combat power per ton than today's heavy forces.

Fighting in complex and mixed terrain will be more prevalent and we will need forces that can prevail rapidly and decisively in such conditions as well. These forces will require specialized equipment and training. Offensive fighting in urban terrain will require a different set of capabilities than that required of the crisis-response force. Some of this capability is acquired through specialized training, and some depends on specialized urban combat weapons. Light organizations as we know them today do not have the carrying capacity to move the suite of weapons required for decisive offensive operations in urban terrain.

"Air-mechanized" vertical envelopment capability. Without a substantial vertical envelopment potential, we might not be successful in depth against even a middle-ranked power. Picking one's way through a modern defense on the ground is time consuming and dangerous. Doing so becomes a linear combined arms fight supported by deep shaping fires for attrition and suppression in depth. Some call this nonlinear combat, but it is not. Deep fires, whatever the source, cause damage but must be rapidly exploited for optimal effect. Otherwise, the enemy is free to decide how best to cope. Mutually supportive actions in depth are not decisive until the line of combined arms action progresses.

The post-World War I solution was large-scale mobile mounted warfare. During World War II about 10 percent of the fighting forces of the major armies were capable of mobile mounted warfare. That percentage was enough to break the deadlock of the trenches. The initial problem for mobile units was penetrating or enveloping the crust of the potent defenses to allow rapid movement through them. Dismounted infantry formations made this possible in many cases. Their objective, then, was to penetrate with a large enough force to threaten operationally significant objectives, and to do it swiftly enough to make enemy reaction in sufficient strength impossible. When such penetration, size and speed were achieved, campaigns were short and decisive.

A Marine Corps MV-22 Osprey prepares to set down an M777 lightweight 155mm howitzer during capability tests.

Futuristic war games have shown that to avoid a static, protracted campaign, a power-projection force must have nonlinear combat capability that generally involves vertical envelopment.

Organizations must, at a minimum, be able to shape the conditions for successful vertical envelopment by destroying or suppressing enemy surveillance, C², air defense, and long-range precision missiles. While a



ground-based direct pressure force threatens the enemy's front; an air-mechanized mobile force attacks in depth. Today's light forces will not suffice because they become immobilized when placed on the ground. Mobility and superb situational awareness will be the keys to these forces' survival and potency. Further, units that execute vertical-envelopment operations must have sufficient assets to achieve substantial results—the dislocation of a corps-size unit, for example. These assets must have the capability to maneuver through compact air corridors to unpredictable landing zones on a scale that has either tactical or operational significance, depending on intent. Of course, such units must also possess lethality, mobility and situational understanding similar to that of the crisis-response forces. The Army After Next war games showed that air-mechanized forces shorten campaigns dramatically. In fact, ground campaigns would have been linear without air mechanized forces.

Full Spectrum Dominance. No campaign is concluded until responsibility for control and security of populations and terrain passes to duly constituted civilian authorities. Until then, stability operations are usually conducted after combat operations. The more rapidly and smoothly transition from combat occurs, the more rapidly and smoothly the next and final transition takes place. These transitions need planning and specific force capabilities derived from both training and organization.

Deploying the Army within time and lift constraints is a major challenge, which requires force designers to consider physical and human engineering solutions for a speedy, more efficient flow of combat potential:

- Greater economies and higher organizational output by CS and CSS organizations.
- Fewer mode changes.
- Sizing organizational equipment for easy transport by many more modes.
- More compact combined arms organizations with greater combat power per ton.
- Forces flexible enough to transition from administrative to tactical operation at home station and arrive tailored for the first mission.
- A thorough review of the Army's echelonment schemes from corps down to the small unit level.
- Combined arms force designs that balance the requirements of teamwork and cohesiveness from initial deployment, through the initial shock of battle to sustained decisive operations.

Getting the Army there with the right capability is the other part of the challenge. All organizations will need to be designed for mobile, widely disbursed, self-reliant and nonlinear operations with no real sanctuary. Combat and logistic operations will have to achieve workable battle rhythms. Organizations that deploy to a crisis area must suffer losses gracefully and avoid sudden, catastrophic failures. While reach-back capabilities and similar streamlining measures are a key principle in strategic deployability, organizational resilience through redundancies and compensating capabilities will be essential.

Future requirements will differ greatly among rapid crisis response, decisive offensive ground action and large-scale vertical envelopments by mobile protected forces. Whether and what kinds of specialized forces will be required to cover this range of requirements is not clear. Combined arms force modules of several kinds will likely be required, with a broad capability to cross attach and tailor forces to missions without compromising cohesion and team work. The current priorities are heading the Army in the right

direction. But there is much left to do. **MR**

1. The objective force is the force toward which the Army will transition over the next decade or more. The details of this force design will evolve over the next few years as the Army continues its explorations of requirements and options to meet them.
 2. Civil Reserve Air Fleet. The Defense Department has arrangements with commercial carriers to supply up to 325 passenger and 208 cargo aircraft. It requires presidential authority to call on these assets.
 3. One company that has demonstrated and sold such vehicle designs is the "Parker Flyer" company in California. These vehicles, made of common components, can be built in exactly the right size for the specific mission. The smaller weapon platforms can be stacked and tipped for optimum loading in aircraft.
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Closing With the Enemy: The Core Competency of an Army

By BG Huba Wass de Czege, US Army, Retired

Technology is advancing at an astonishing pace. The fruits of the information age—precision and information—will allow future forces to concentrate the effects of lethal firepower well beyond our imagination today. In a future crisis requiring military intervention it is conceivable that the combined

precision fires of distant and widely dispersed aircraft, ships, missiles and long-range ground artillery could be orchestrated to arrive on all key targets of a large enemy formation or functional grouping simultaneously or within a very few minutes. The damage to the enemy and the shock effect of such action could be devastating. If this will be possible, why would we need soldiers and Marines to engage in close combat in the future? Beginning a discussion of ground tactics by addressing whether future close combat is even necessary indicates the rapid pace of change in the military art. There is a growing belief, even within the ground services, that soldiers and Marines can fight at arm's length, remain beyond the practical limits of the enemy's direct fire weapons and minimize casualties.

Two basic questions need answering. Is actual ground combat still a necessary feature of modern warfare? And if so, why can't it be conducted at arm's length? Answering these questions requires understanding some fundamentals of war, their continuing validity and their combined effect.

First, the enemy quits not because of what has already happened, but because of what he believes might happen if he does not. Fires, whether stand-off or close, are transient. They have great moral influence, but only for the duration of their existence. Extended-range fires can set the terms of close combat, but the enemy quits because he fears the inevitability of defeat. There is no surer way to demonstrate that inevitability than with an overwhelming and imminent threat on the ground. Ground combat veterans and military historians generally agree that instances of defenses to the last man are rare, and attacks to the last man are even more rare. The psychological breaking point is reached as soon as the inevitability of continued resistance is clear.

Second, the enemy is more likely to be forced to quit when attacked in multiple dimensions. The value of each additional increment of effort in a unidimensional attack will begin to diminish because humans adjust psychologically, organizations develop countermeasures and leaders adjust tactics. Because of combined arms synergy, evading attack in one dimension exposes vulnerability in another. A dispersed enemy presents a more difficult air and long-range artillery target, but is more vulnerable to ground action. While increases in effort within the same dimension produce only additive results, spreading that effort across several dimensions increases results geometrically. Moving from the tactics of firefights to those of battles increases the scope for those combinations. Various lethal mixes combine with merely suppressive ones—those which impede or degrade functions and systems such as jamming, obstacle systems, deception and psychological operations.

Third, close combat may be the only way to insure a decisive outcome—hold a piece of ground, secure a population center or assure access to lines of communications or air and ground avenues of approach to the enemy. In many ways, the stand-off precision engagement approach implies a willingness to gamble about the outcome—that the enemy will yield before either will or resources are exhausted. When a ground commander enters into close combat, either to defeat an attack or to dislodge an entrenched enemy, the purpose is presumably worth the possible loss of life. In engagements, battles or campaigns fought with stand-off means (even with more advanced weapons, reconnaissance and targeting means), the enemy makes the decision whether to quit. He endures if he can because his purposes are also very important.

Victory is very difficult to determine in stand-off fighting. Battle damage assessment through stand-off technical means is a murky science, and will remain murky in the future ground environment. In land combat it is difficult to differentiate a real kill from a mobility kill or know whether two people with their hands up speak for the whole outfit. Further, without a close and immediate ground presence, it is

difficult to guarantee the safety of the population from even defeated, retreating and dispersed enemy soldiers—especially when fighting on allied soil.

Extended-range precision weapons and inevitable closure by soldiers or Marines in sufficient strength can conclude the action decisively. To defeat the enemy at the tactical level, ground forces have to close to zero meters and beyond. Defeating the enemy at the operational level means controlling him on the ground and negating his control over populations and terrain. For strategic victory, the enemy regime must have no choice but to comply with the terms of the peace. The only way to be assured of this enemy compliance is occupation on the ground.

Fourth, time is always a critical commodity at all levels of war and the enemy is likely to quit sooner if he is also faces costly ground close combat. A military effort without ground action leaves the decision of when to capitulate with the enemy. Even when defeat is inevitable, delaying the inevitable can be advantageous at all levels of war. Lengthening the campaign could lead to better terms. Extending the conclusion of losing battles, engagements and fire fights can salvage some benefits in the greater campaign.

Wise senior decision makers and competent ground commanders have always weighed the risks of ground combat against the specific requirements of the mission. In exceptional cases leaders can choose a slower, more cautious stand-off firepower approach, for sometimes time is secondary. The relative local balance of strength could favor the enemy. Or the seizure of a particular objective can be delayed, while the enemy therein is contained. Advanced systems with greater capabilities may provide more latitude, but they do not change the basic calculus. Close combat can foreclose the enemy's ability to delay defeat.

Fifth, in future armed contests with a determined enemy, total US casualties may be much lower with a ground component (and close combat) than without. Avoiding ground combat exacerbates asymmetries between ourselves and potential foes. A future prolonged air war of attrition against a determined enemy will inevitably lead to casualties on our side. If it is apparent that casualty avoidance is a primary concern and that inducing casualties would be of strategic value, then the future enemy has easier targets among support troops and civilians than among our well trained, superbly led, mobile, protected and situationally aware combat troops. To achieve his aims the enemy will strike back asymmetrically, using special operating troops and weapons of mass impact. Those casualties may well be global. A short, sharp full-dimensional campaign limits opportunities to organize and conduct such "retribution terror" campaigns, and allows the victor the chance to crush the offending regime (as was done in Panama) and change the leadership.

Close combat by modernized and situationally aware forces supported by precision lethal and suppressive effects can be conducted with far fewer casualties than people believe. Close combat does not involve a choice of either direct-fire weapons or stand-off indirect fires but a close coordination of the two. Small unit commanders of the past have often succeeded without casualties—even against well-entrenched enemies. They approached the enemy from unpredictable (or less predictable) directions with effective reconnaissance well forward. They fired first with overwhelming effects—usually artillery and mortars, adding air strikes when available. They used long-range fires to destroy or suppress the enemy's ability to use these same weapons against their own troops. They maintained a suppressive and fixing overmatch against the enemy's ability to use his direct-fire weapons effectively. For this they used long-range supporting fires and overwatching long-range direct fires from covered positions.

Under and behind this curtain of fires, fighting vehicles and infantry closed to zero meters and beyond. To avoid casualties it was important to follow closely behind this curtain of fires, whose suppressive effects at this stage were more important than their lethal effects. It served to keep the enemy down and under protective cover and in shock. Wise commanders knew that a short, sharp fight was more conducive to saving lives than a long, drawn-out one. The shock effect of an attack wears off as time progresses and even more firepower is necessary later to induce the same psychological, suppressive effect because enemy soldiers adjust to survive.

Given the enhanced situational understanding, greater precision and suppressive effects, improved command and control and greater cooperation possible in the future, soldiers and Marines should be able to close much more safely than they did in the past.

Sixth, full-dimensional operations, those including ground combat, may well cause less collateral damage than stand-off precision operations alone. While unintended destruction will continue to be the by-product of future warfare, the full dimensional approach can be far less destructive for two reasons. First, stand-off precision engagements tend to be blunt instruments compared to the same precision firepower technology employed by a ground combined arms commander in support of well trained, well disciplined, situationally aware combat troops using cooperative engagement tactics. Precision from a distance is less discriminating than precision from a closer vantage point, with a clearer picture of things as they are on the ground. Second, stand-off precision engagements would require a longer period of bombardment, and perhaps more overall destructive power, to achieve the same end. A full dimensional approach can cause enemy resistance to collapse much more quickly, probably with greatly reduced collateral damage.

Simply stated, soldiers and Marines, on foot or in fighting vehicles, still have to close on the enemy to accelerate the pace of defeat and ensure specific, decisive tactical results. The common myth that close combat equates to numerous casualties and extensive destruction owes more to images from *Star Wars* and *Saving Private Ryan* than the study of current reality. **MR**

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Leader Development in a Transforming Army

by Colonel Jon H. Moilanen, US Army, and Lieutenant Colonel Donald M. Craig, US Army

We are working on producing leaders for change, not just leaders who are doctrinally capable and competent leaders for warfighting, but leaders also for all kinds of missions that we are asked to be able to do today across the full spectrum.

— The Honorable Louis Caldera
Secretary of the Army

SECRETARY OF THE ARMY Louis Caldera has underscored the requirement to develop competent and capable leaders. Today, the Army focuses on transforming a brigade organization for more rapid deployment. While the US Army remains trained and ready for decisive combat in potential major theaters of war (MTW), complex and diverse worldwide environments from warfighting in smaller scale contingencies (SSC) to humanitarian assistance require improved strategic responsiveness. The capability to deploy American soldiers—rapidly—is essential for shaping these types of national, international and global situations. That agility is more a function of leadership than technology.

And so, as the Army transforms brigade-size formations and realizes near-term strategic responsiveness, leader development will remain fundamental. Companion principles of teamwork, discipline and American warrior ethos also hone the Army's core competency—keeping “its soldiers, and those who support them, prepared to conduct prompt and sustained operations throughout the entire spectrum of military operations in any environment that requires land-force capabilities.”¹ To remain ready for those contingencies the Army is committed to developing people.

Successful transformation of the Army depends on developing innovative leaders for its new organizations and equipment. The Army's leadership doctrine provides fundamental principles to advance leader development in the uncertain environments ahead. Army modernization and experimentation have highlighted several avenues for particular emphasis. Improved analog and digital command and control (C²) systems improve decision making through enhanced situational understanding. However, regardless of the environment or the technology, mental agility—the ability to maintain the initiative in these complex and ambiguous situations—is key to balancing and synchronizing all

six Army imperatives—quality people, training, force mix, doctrine, modern equipment and leader development.

Adaptive Leaders for the Transforming Army

Adaptive leaders are innovative and display initiative with prudent risktaking—training and education must enable them to exploit information-age situational understanding and become agents of change. The leadership framework of Field Manual (FM) 22-100, *Army Leadership*, describes characteristics of adaptive leaders. The proven tenets of a clearly understood mission and higher commander's intent energize the union of adaptive decision making and leadership. Whether for a small unit leader in an urban alleyway fight or for a senior leader assessing an operation's civil-military impact, the leadership framework of values, attributes, skills and actions remains the foundation of all leadership and leader development action.

Leader development presumes mid- and long-term commitments to improving leader qualities by merging the influences of many factors—military and civil education, self-study, experiences, feedback, reflecting, coaching and mentoring. The Army's leader development model, described in DA Pamphlet 350-58, *Leader Development for America's Army*, includes operational assignments, institutional education and training, and self-development.³ The goal of leader development at all levels is to ensure that the Army nurtures adaptive leaders of character and competence prepared to lead across a full spectrum of operational environments.

Leaders and soldiers in the 21st century must master information-age technology, for much of the operational environment will be digitized. Simultaneously, leaders must be able to operate using analog or hybrid (analog/digital) command, control, communications, computers, intelligence, surveillance and reconnaissance (C⁴ISR) systems. Building such soldiers and leaders requires a learning organization with new models that span the institutional and educational base, unit operational readiness programs and professional self-development.

As the Army transforms into a more strategically responsive land force, success still depends on leaders, soldiers and cohesive teams. Information-age

technologies, enhanced logistics and improved force projection means will support, but not replace, leaders. Just as leaders must adapt to ambiguous and changing situations, soldiers must perform in new multifunctional roles, and teams must rapidly integrate and synchronize skills, knowledge and attributes into mission-tailored capabilities. But as always, superior leaders distinguish exceptional units. Those effective, adaptive leaders within teams possess the foundational characteristics outlined in FM 22-100—values, attributes, skills and actions.⁴

Values are the core of everything the Army is and does, providing a sense of purpose, moral and legal basis for action and means to resolve leadership and decision-making ambiguities. Army leaders establish an environment in which quality people do what is correct, leaders and soldiers treat others as they would want to be treated themselves and all team members have the opportunity to develop their full potential as professionals.

Among Army leaders' qualities, mental agility especially enhances the physical agility of current and future systems, platforms and organizations. Progressive research and development provide enhanced ways and means to man and lead the Army in the early 21st century.

Leaders must possess the interpersonal skills necessary to develop and sustain high-performance combined arms teams, as well as work with other services and nations during mission accomplishment. Complex, ambiguous operating environments demand leaders with fine-tuned conceptual skills for rapid information filtering, analysis and decision making. These teams may routinely deploy as part of a coalition to locations with immature transportation and logistic infrastructures and uncertain political situations—conditions requiring high levels of innovation and cultural awareness. Digital and improved analog C⁴ISR systems and cutting-edge weapon systems will increase technical knowledge requirements for all members of the team. Within the tactical dimension, leaders have a significant readiness challenge—prepare to deploy on short notice, operate in any environment and fight as a combined arms team at *company* level.

Leader Training in Brigade Combat Teams

Tasks, conditions and standards outline near-term success in leader training. Common training tasks, soldiers' manuals and standing operating procedures assist commanders and other leaders in assessing subordinate leaders' performance and poten-

tial. Required competencies provide a focus for professional self-development, institutional curricula and unit readiness programs. Those benchmarks will still apply in brigade combat teams.

The four doctrinal leader competencies are conceptual, interpersonal, technical and tactical skills. Using this leadership aptitude and knowledge, an evolving combined arms training strategy (CATS) for the brigade will incorporate leader and team performance indicators with task-condition-standard criteria to assess and evaluate proficiency. FM 22-100 lists and defines these leader performance areas.⁵ Practical applications by the brigade and supporting Army and joint experiments will more precisely measure leader performance and effectiveness.

Well-designed leader training scenarios include all four leader competencies—development of leader and team tasks, conditions and standards. Mission sets range a full spectrum of traditional environments and, more important in evolving global military responsibilities, vexing issues of asymmetric, nontraditional threats. Flexible conditions place leaders and teams in quickly changing situations using variables in areas such as friendly forces; enemy capabilities; geography and weather limitations; time; and larger civil, political and military considerations that affect rules of engagement. A menu of complex vignettes allows for flexible tactical situations at each echelon of leader and team during training events. Event-based programs within the brigade CATS offer multidimensional operational architecture, leader roles and new multifunctional responsibilities. As battle-focused training doctrine emphasizes, proven methodologies such as training support packages (TSP); mission training plans (MTP); and evolutionary tactics, techniques and procedures (TTP) are foundational.

Battle focus recognizes the critical linkage between collective mission essential tasks and individual leader tasks. Battle tasks clearly state the essential tasks for teams and reinforce the requirement to employ a team of teams. But analyzing battle tasks also identifies sets of critical leader tasks within each team function. Different direct, organizational and strategic leadership principles accent the multidimensional fabric of the brigade's mission essential task list (METL) and its application of TTP. Established initial operational capabilities, priorities of effort and common training tasks for brigade combat team elements guide which leader development competencies to insert into particular mission training sets.

Developing the TSP-MTP-TTP structure requires a statement of situational conditions for multiple operational environments. Near-term capabilities recognize assigned mission priorities, readily available equipment, materiel and interim weapon system capabilities for achieving mission readiness. Once realized, those capabilities will evolve into the eventual objective design and team capability that lie beyond near-term practicality. Amid changing hardware and conditions, being able to rapidly deploy and employ land forces within specified timelines remains an overarching measure of leader—as well as organizational—effectiveness.

The ongoing development of a mission support training facility (MTSF) promises embedded multifunctional capabilities and subject matter expertise for seamless training, mission rehearsal, operational support and mission execution. Digital systems allow access to knowledge networks of the global information environment, the full suite of Army and joint simulations and linkage to operational C⁴ISR systems. Distance learning and embedded simulations improve the ability to train habitually associated leaders and units at multiple locations. Leader and team development programs are competency-based with information-age technology to optimize institutional information, share expert knowledge and insight and capture operational lessons. Brigade leader programs, tailored to specific unit mission sets, meet the needs of active and reserve component leaders, soldiers and teams. Leaders who build and maintain a learning climate reinforce organizational and individual improvement, strengthen teamwork and breed success.

Developing Leaders— A Long-Term Imperative

Commanders' efforts to fortify the organizational pillar must complement efforts in the institution and self-development pillars to produce leaders with the tactical skills necessary for the full spectrum of military operations. The Army's leader development model must keep pace with dynamic requirements to educate and train high-quality leaders. Learning models, educational approaches and operational experiences combine effects to prepare leaders for increasing demands.

Information-age technologies quickly break down the traditional image of separate yet mutually supporting leader development pillars. Personal computers, faster worldwide web connections, video-teleconferencing and other interactive multimedia opportunities fuse leader development pillars into an

integral network of networks.

To develop leaders, mental flexibility and conceptual skills for dynamic operations, the organization must foster a lifetime-learner environment that exploits distance learning, knowledge networks and continuing education. Correspondingly shortened leader developmental timelines require precisely defined, demanding self-development processes, improved learning from operational experience and adaptive, competency-based institutional learning centers for all Army leaders—officer, warrant officer, noncommissioned officer, soldier and civilian.

Clear implications arise for the Army's institutional education system, training within operational assignments and self-development programs. Together, pillars must produce leaders who can translate patterns and trends that emerge from diverse operational variables and perceive the second- and third-order effects on accomplishing mission and intent. Whether tasks are simple or complex, speed and precision mark critical aspects of maintaining the initiative as conditions change. This understanding of the operational environment and the pace of changes require adaptive abilities at the individual leader level as well as the leadership to channel team effort into a coherent multiecheloned combined arms action plan. These integrated actions nevertheless require a commander-centric battle focus—concentrating leader and team resources to meet a commander's critical information and intelligence needs, and focusing collective combat power on commander-directed essential tasks.

Reliable tools must be developed to assess and evaluate the effectiveness of leaders and rapid teambuilding. Automated assessment tools such as the 360-degree assessment (by seniors, peers and subordinates) give commanders the capability to evaluate an organizational climate quickly and accurately, boost personal and subordinate performance and improve group dynamics. Some assessment tools will continually evolve as commanders implement varied command climate instruments or techniques to identify, assess, evaluate and enhance adaptive leadership, multifunctional performance and team success.

Proven leadership techniques and procedures are less likely to change—effective coaching; establishing a mentoring system among peers, superiors and subordinates; and empowered self-development when progressive evaluations demonstrate a true learning organization.

Together, these initiatives show that leader development is a long-term process of continually im-

proving performance rather than a finite endpoint. As information-age technologies reshape concepts for learning, leaders must exploit knowledge networks, distance learning and embedded simulations. Formal schooling will retain its importance during a leader's career; however, information-age learning will shift more to unit settings, in garrison and field, with intensive mentoring by leaders and experts. Candid, critical exchanges among peers, subordinates and superiors indicate a command climate open to progress and learning.

Propelling the Transformation

How do we proceed? Success involves developing soldier- and leader-oriented systems that enhance individual performance, increase unit readiness and improve force effectiveness. We must have leaders whose mental agility matches future system capabilities and the evolving demands of doctrine, organizations and materiel. Four measures will lead the advance:

- Continued experimentation and behavioral studies will help articulate actions to develop critical skills, knowledge and attributes (SKAs). Leadership doctrine in FM 22-100 provides a universal framework for further defining critical SKAs and improving initiative, judgement and decision making.
- A strategy to balance and synchronize the readiness domains of training, leader development and soldiers with the domains of doctrine, organization and materiel.
- An adaptive learning model to train and educate leaders, soldiers and teams in ambiguous and complex settings. Such a learning model would focus on conceptual and interpersonal skills, as well as technical proficiency and tactical expertise, using complex and rapidly changing variables, digital and analog C² enablers and a wide range of mission sets. Information-age simulation technology embedded in unit equipment and systems also promotes feedback from coaches and mentors.

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- Army modernization programs that resource the research, development and experimentation of their human dimension initiatives. Resource priorities must balance advances in doctrine, force mix, modern equipment, training, leader development and quality people issues.

The Human Dimension and Readiness

Transforming the Army requires leveraging the human dimension of information-age C². In a learning organization, leaders and soldiers achieve situational understanding and develop the mental agility to match the physical agility of current organizations and materiel. Learning prepares them for the expanded capabilities of pending organizational designs and weapon systems. Forming strategically responsive brigade organizations is fundamental to Army transformation. However, by adjusting policies and programs based on senior leader guidance, practical experience and thoughtful insight, the Army will also deliver professionals with the caliber and character required to lead cohesive high-performance teams.

Today the Army is trained, ready and looking to the future. The vision of the future, propelled by the requirements of ever-increasing challenges in a complex 21st-century world, center on improved readiness, strategic responsiveness and the essential value of quality soldiers, leaders and teams. These multifunctional soldiers, adaptive leaders and multidimensional teams of teams will excel at embracing the human dimension of change while sustaining information superiority and maneuver dominance, overmatching any adversary in combat power and ensuring a premier trained and ready force well into the 21st century. **MR**

1. *The Army Plan for Fiscal Year 2000-2015* (Washington, DC.: Office of the Chief of Staff of the Army, 24 Mar 98), v.

2. US Army Field Manual (FM) 22-100, *Army Leadership* (Washington, DC: US Government Printing Office [GPO], August 1999).

3. Department of the Army Pamphlet 350-58, *Leader Development for America's Army* (Washington, DC: Deputy Chief of Staff for Operations, 13 October 1994).

4. FM 22-100.

5. *Ibid.*, Appendix B, "Performance Indicators."

6. *Ibid.*

History of Transformation

Combat Studies Institute

THROUGHOUT THE 20th century, the US Army has periodically reviewed the structure and organization of its primary combat unit, the division, to posture itself better to meet changing requirements. Since 1939, the Army has conducted at least 11 such reviews with associated testing and validation exercises, the most recent being the reorganization of the light and heavy divisions in the mid-to-late 1980s. Given the significant changes in the world political environment since the collapse of the Soviet Union and the Warsaw Pact in the early 1990s, another such review is warranted, if not overdue.

In November 1999, US Army Chief of Staff Eric K. Shinseki directed the US Army Training and Doctrine Command (TRADOC) to undertake just such a comprehensive review. In response, the TRADOC commander, General John Abrams, began developing a brigade-sized force capable of rapid deployment, yet with the staying power of the current heavy force. Toward that end, the Combined Arms Center tasked the Combat Studies Institute to analyze past US Army division/brigade restructuring initiatives in an attempt to “determine critical historical insights gained and common themes from previous Army experiments germane to standing up the Prototype [Initial] Brigade.”

Triangular Infantry Division, 1939.

The US Army’s first major review of its divisional structure had its roots during the Spanish American War, when the Army implemented an *ad hoc* triangular divisional organization of three brigades, each composed of three regiments.

This structure endured until World War I, when Army planners observed that trench warfare made tactical maneuver difficult as increased firepower exacted a tremendous toll on attacking formations. The chosen solution was a division large enough to absorb heavy losses and continue combat operations. The Army provisionally organized into square

The ROAD reorganization project was characterized by careful planning, mobilization of planning resources at branch and staff schools at several points, systematic testing and evaluation, and an implementation schedule that was timely but not hasty. ROAD, a variation of the World War II armored division, was the standard division configuration between 1962 and 1983. It was the division with which the Army went to war in Vietnam.

divisions, with two brigades of two regiments each. These larger divisions met the needs of trench warfare in relation to power, endurance, shock action and easy passage through lines.

In the interwar years European armies modernized and discarded older, unwieldy division designs. The US Army recognized that its square division lacked mobility, so it examined several proposals for a triangular division, but the Great Depression overtook events.

In 1936, the Army Chief of Staff General Malin Craig created the Modernization Board to examine the Army’s organization. The board proposed an triangular infantry division design consisting of three combat teams of three regiments each. The 2d Infantry Division, in a first-of-its-kind field experiment, tested the design and validated a smaller, more powerful division with increased firepower, range and mobility.

Planners assumed the new infantry division would be part of a larger force that would provide combat and logistical support, so they reduced the number of organic artillery and auxiliary units and did not assign organic armor. With a minimum of defensive weapons, the division remained a compact offensive unit streamlined for open warfare and reinforced by pooling common support units at corps and army level.

Soldiers operating a field radio during a training exercise, circa 1940.



US Army

During the 1935 test period, the Army grappled with mechanization, aviation, electronics, weapons and tactics to exploit new tools, such as voice radios, close air support, self-propelled artillery, tanks, semiautomatic rifles and light machine guns. The new division benefited from reliable motorized transport; light, reliable voice radios; and new infantry weapons that increased the individual soldier's firepower.

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With the US entry into World War II, the Army rapidly adjusted divisional organization based on combat lessons. Manpower availability, shipping space and the weapon quality influenced division organization with the latter proving most influential. Although the Army tried three additional division designs during the war—light, alpine and motorized—the standard, triangular infantry division proved suitable in all of the Army's combat environments. The basic triangular division continued substantially unchanged from the end of World War II until 1955.

Armored Division, 1940-1943. While the war caused little change in the infantry division's structure, the advent of the tank resulted in the

birth of an entirely new organization. In World War I, the tank functioned almost exclusively in the infantry-support role, although armor advocates suggested that tanks, operating in mass, would someday constitute the arm of decision. Experiments conducted by various nations between the world wars demonstrated that large armored forces were indeed viable. The US Army, too, conducted tests with the Infantry continuing as the proponent. In 1938 the 7th Cavalry Brigade (Mechanized) was activated, but not until May 1940 did the Cavalry's mechanized brigade join up with a brigade of the Infantry's tanks for testing in maneuvers.

The German conquest of France in the spring of 1940 triggered the creation of an American armored arm. The 1st and 2d Armored Divisions were activated out of existing Infantry and Cavalry tank and mechanized formations. Lacking any branch-specific training materials, the new armored formations borrowed and modified training programs. In corps-on-corps maneuvers conducted in the summer of 1941, armored formations, utilizing their high mobility, repeatedly out-maneuvered their infantry-heavy opponents and won impressive "victories." During

Twin-turreted M2A2 light tanks cut a swath through a cornfield during Army maneuvers. They are each armed with a 30 caliber machine gun and 37mm main gun.



US Army

During autumn 1941 army-versus-army maneuvers in Louisiana and the Carolinas, antitank elements decimated the attacking armored formations, exposing the armored division's over-reliance on light tanks and its inadequate assets and command structure for combined-arms combat. . . . The key developments precipitating the emergence of the armored division were conceptual, not technological.

autumn 1941 army-versus-army maneuvers in Louisiana and the Carolinas, antitank elements decimated the attacking armored formations, exposing the armored division's over-reliance on light tanks and its inadequate assets and command structure for combined-arms combat.

The maneuvers resulted in a new division organization that featured two rather than three armored regimental headquarters, increased the infantry regiment to three battalions and consolidated the artillery battalions under a division artillery headquarters. For tactical control of combat elements, the new division structure included two brigade-level combat command headquarters, to which any mix of combat and support elements could be assigned for specific missions. Shifting its emphasis from mobility to fighting power, the new division doubled the number of medium tank battalions.

The key developments precipitating the emergence of the armored division were conceptual, not technological. However, a host of supporting hardware had to emerge before armored formations could live up to their potential. Reliable motor transport, self-propelled artillery, portable radios and light

liaison aircraft were just a few of the technologies that made the armored division effective.

The armored division first saw battle in Tunisia and suffered a notable defeat in the 1943 battle of Kasserine Pass, but few, if any, observers blamed the division structure for the debacle. A further reorganization in 1943 eliminated all regimental headquarters and increased the number of combat commands to three, producing a leaner, more flexible division. The combat command concept remains a feature of today's Army.

The process of creating and then modifying an American armored division was not undertaken in a vacuum. With war already raging in Europe, the US Army had a wealth of combat data upon which to draw. Elements of both British and German armored doctrine can be seen in the evolution of the US armored force.

Division Reorganization, 1947-1948. After World War II concluded in Europe, the Army analyzed the strategy, tactics and administration of its forces. It recommended retention of only three division types—infantry, armored and airborne—concluding that the standard infantry

division could accomplish diverse missions, making special divisions (light or mountain) unnecessary. Additionally, wartime experience had shown the infantry division's subordinate units strength and

The LID proceeded quickly from idea to fielded unit. The division was given only enough support systems to operate in a low-intensity environment for 48 hours without external support. Designers reduced logistics, fire support, antitank and survivability assets.

composition were inadequate for independent, efficient offensive and defensive operations. The absence of tanks in the infantry division's organization was especially problematic. Adding soldiers for communications, intelligence, reconnaissance and administration was proposed, as well as improved weapons for cannon and antitank companies.

Despite the influence of atomic weapons on military thinking, these new divisions reflected the Army's belief that the nature of ground combat remained unchanged. The new infantry division retained much of the structure of the World War II division. Only one division, the 1st Infantry Division in Germany, attained its full table of organization strength before 1950 because of serious shortfalls in equipment, manpower and funding. The strengths of the Army's other nine divisions varied between 55 and 80 percent. Infantry regiments lacked one battalion and the tank company, while artillery battalions had two firing batteries instead of three.

The Army was hollow and its initial defeats in Korea can be traced directly to post-World War II manning and equipment policies. Once fully manned and equipped, the divisional design proved more than adequate.

Pentomic Division, 1955-1963. In 1954, no Army officer would have claimed that the institution had been prepared to conduct ground warfare in Korea. The Korean War had discredited a US defense policy that relied on strategic nuclear weapons to deter conventional military aggression. Additionally, now the Soviet Union possessed their own deliverable nuclear weapons. In response, the Army needed a doctrine and force structure based on the use of tactical nuclear weapons, as opposed to an all-out nuclear exchange.

Structured for a battlefield of greater depth and dispersion, the "Pentomic Division" would have five

relatively self-contained battle groups, each one made up of five companies. Being smaller than a regiment but larger than a battalion, a battle group was supposed to be both agile and strong, the combination necessary to enhance survivability in the face of nuclear explosions.

Ultimately, the Pentomic Division did not have firepower and communication to perform basic warfighting functions. Resource constraints prevented fielding the required artillery support. The technological shortcomings of communications equipment prevented commanders from effectively handling their enlarged span of control. A battle group commander had to coordinate five rifle companies, a mortar battery, a tank company, direct-support artillery and a reconnaissance platoon.

Whatever theoretical merits the Pentomic Division had, it was never made operational or tested in combat. The Eisenhower administration's strategic reliance on the nuclear deterrence provided by the expensive bombers of Strategic Air Command consumed the resources for artillery, communications equipment and airlift capabilities needed to put viable Pentomic Divisions in the field.

ROAD, 1960-1963. To overcome the shortcomings of the Pentomic Division, representatives from the US Army Command and General Staff College and branch schools developed the Reorganization Objective Army Divisions 1965 (ROAD 1965) design. Approved for immediate implementation in May 1961, and delayed by the Cuban Missile Crisis, the 1st Armored and 5th Infantry Divisions were reorganized to the ROAD 65 design and activated in February 1962 with the rest of the Army's divisions following between January 1963 to May 1964.

ROAD divisional organization featured a common support base for infantry, mechanized and armored divisions. This common base included a division headquarters, division artillery, an engineer battalion, an aviation battalion and other support elements. Each ROAD division had three maneuver combat brigade headquarters to which maneuver battalions were attached. In principle, only the mix of maneuver battalion types—infantry, mechanized or tank—differed from division to division. Also, all supply and technical support elements were gathered under one commander for the first time in the division support command, and aviation assets were double those in the old Pentomic Divisions. In combat, the ROAD divisions would be task organized—maneuver battalions and other elements attached as needed to one of the three combat brigade headquar-

An M41 Walker Bulldog light tank and M59 armored personnel carrier of the 2d Armored Cavalry Regiment acting as aggressor forces during an exercise at Fort Meade, Maryland, May 1957.



Ultimately, the Pentomic Division did not have firepower and communication to perform basic warfighting functions. Resource constraints prevented the Army from fielding the required artillery support. The technological shortcomings of contemporary communications equipment prevented commanders from effectively handling their enlarged span of control.

ters. Administratively, each battalion reported directly to division headquarters. Brigade headquarters served only to direct maneuver and combat.

ROAD divisions were designed to be versatile, able to operate in all environments—against conventional heavy forces in Europe, or against lighter conventional forces or unconventional/guerrilla threats around the world. The divisions were configured to function in a non-nuclear environment but could convert to nuclear readiness if needed—the opposite approach of the Pentomic Division.

The ROAD reorganization project was characterized by careful planning, mobilization of planning resources at branch and staff schools at several points, systematic testing and evaluation, and an implementation schedule that was timely but not hasty. ROAD, a variation of the World War II armored division, was the standard division configuration between 1962 and 1983, when it was replaced by the Army of Excellence model. It was the division with which the Army went to war in Vietnam.

11th Air Assault Division (TEST), 1963-1965. By the mid-1950s, the Army Aviation School at Fort Rucker, Alabama, was conducting experiments and improvising ways to mount guns and rockets on helicopters and devising ways to use them tactically for a better ratio between manpower and firepower on the potential nuclear (therefore dis-

persed) battlefield. In 1962, the Howze Board advised the Army that drastic force structure changes would be necessary to “accommodate the near revolutionary change in land combat tactics and doctrine” implied by the extensive use of the helicopter.

The 11th Air Assault Division (Test) was formed in February 1963 as a tactical training and experimental test bed at Fort Benning, Georgia. At the same time, the 10th Air Transport Brigade was created around an existing aviation battalion at Fort Benning. Most soldiers had little knowledge of helicopters or their potential. Tactics, techniques and procedures had to be created as the division and test bed grew amid daily changes.

The initial tests evaluated airborne command and control, assault doctrine, formation flying, suppression of hostile fire in landing zones by aerial artillery, air lines of communication and airspace control. The unit’s limitations included poor ground mobility, vulnerability to armored attacks and operational vulnerability to bad weather and extended operations. However, the division’s shortcomings were offset by its excellence in high-tempo operations, long-range capability, flexibility to fight simultaneously in different directions and ability to quickly concentrate forces at critical points.

The 11th Air Assault tested its ideas and equipment in Vietnam. It formed, equipped and trained six airmobile companies to send into combat. Then,



Troops of the 11th Air Assault Division (Test) attack the 82d Airborne Division during the 1964 North Carolina maneuvers.

The 11th Air Assault Division (Test) was formed in February 1963 as a tactical training and experimental test bed at Fort Benning. . . . The division's shortcomings were offset by its excellence in high-tempo operations, long-range capability, flexibility to fight simultaneously in different directions and ability to quickly concentrate forces at critical points.

the division provided the core for the 1st Cavalry Division (Airmobile) when it was activated in July 1965 and immediately deployed to Vietnam.

As an added benefit, the 11th Air Assault Division (Test) pioneered the methodology used to develop, test and field future Army equipment and force structure. Unfortunately, the bitter interservice rivalry and bickering that characterized the test continued for 20 years.

TRICAP, 1971-1974. Following Vietnam, the Army reoriented on the Soviet threat in Europe and revitalized its North Atlantic Treaty Organization (NATO) connections. Adapting the airmobile concepts honed in Vietnam to fight the numerically superior, heavily mechanized Warsaw Pact forces, the Army developed the triple capability (TRICAP) division concept. The 1st Cavalry Division (TRICAP), activated in May 1971 from elements of the 1st Armored Division and the 1st Cavalry Division (Airmobile), combined an armored brigade (with its fire power, mobility and shock action), an airmobile infantry brigade (to serve as a fixing force with tactical and operational mobility), and an air cavalry combat brigade (for its combination of aerial firepower with tactical and operational mobility) into a single division. Most significant was the air cavalry combat brigade which consisted of one squadron of air cavalry (Vietnam organization) and one

squadron of new air cavalry that would be equipped with attack helicopters featuring tube-launched, optically tracked, wire-guided (TOW) antitank missiles.

Initially, tests did not include major force design issues related to combat forces, but this changed as the project embraced the TRICAP concept. Many believed that TRICAP's triple capability of a division containing armor, airmobile and air cavalry organizations in mid- to high-intensity warfare would demonstrate a revolutionary increase in combat power. They hoped test results would confirm TRICAP as the best combination of combat elements while simultaneously demonstrating its cost-effectiveness as a general-purpose unit.

Tests determined that command, control and communication systems were unable to synchronize combined arms operations involving helicopters, antitank systems, new target-acquisition systems and the new armored and mechanized vehicles. Nor did testing settle conclusively whether the air cavalry combat brigade performed better in a division or as an independent unit. The Army formed the independent 6th Cavalry Brigade for further study.

The evaluation results, coupled with the 1973 Middle East War, convinced the Army that the TRICAP division needed more tanks and less airmobile infantry because it lacked the heavy com-

An Aquila remotely piloted vehicle is launched during testing at Fort Huachuca, Arizona, circa 1976.



Lockheed Missile and Space Company

The ROAD organization not only used 1970s weaponry inefficiently, it could not keep pace with tactical changes emerging from weapon advances like the antitank missile. To remedy this the Division Restructuring Study would integrate new weapons to ensure their ideal use when and where they were most needed. Weapon systems employment would determine force design.

bat power needed to fight on a NATO battlefield. As a result, the division was reorganized in late 1974 consisting of two armored brigades and an air cavalry brigade.

Division Restructuring Study, 1975-1979. In mid-1976, TRADOC began a formal division restructuring effort to create a force design that took maximum advantage of the new generation of equipment the Army expected to receive in the early 1980s. The ROAD organization not only used 1970s weaponry inefficiently, it could not keep pace with tactical changes emerging from weapon advances like the antitank missile. To remedy this the Division Restructuring Study (DRS) would integrate new weapons to ensure their ideal use when and where they were most needed. Weapon systems employment would determine force design.

Simultaneously, indirect fire techniques and air-delivered munitions greatly increased the demands on battlefield commanders attempting to integrate all combined-arms elements. Greater troop dispersion required greater mobility to mass defenders quickly at a threatened breakthrough point. The increasing complexity of war demanded more combat service and combat service support to supply and maintain the troops and the new weapons, continuing a trend of increasing the size of the Army's logistic tail.

The 1st Cavalry Division, fresh from the TRICAP experiment, again served as the primary test unit. Not unexpectedly, testing—called the Division Restructuring Evaluation—yielded mixed results. Strong support emerged for brigades with organic battalions, integration of combined arms at battalion level and below, single-purpose maneuver units and cross attachment at company level. Yet serious doubts remained: the three-tank platoon was too small, the division depended too much on external combat service support and lacked scouts in maneuver battalions, and the brigade's span of control was too large.

In its final form, the ROAD table of organization and equipment (TOE) updated with 1986 weapons was better and more cost-effective for the offense, but the DRS TOE was better and more cost-effective for the defense. In short, features of both the current and the restructured division warranted inclusion in any new design for a heavy division. However, the desire to field a new force design quickly caused accelerated and nonstandard testing that left many questions unanswered.

Division 86, 1978-1980. To correct these shortcomings, the DRS was replaced with a more detailed approach that would create a force design the same way equipment and doctrine were created, around a vision of the battlefield. Using an approach

A line-up of M109 self-propelled howitzers in reserve during a NATO exercise, Kesan, Turkey, 1982.

Division 86 was so named because 1986 was as far into the future as the Army's senior leadership could project the Soviet threat. . . . In the end, Division 86 was too heavy to deploy and too light to fight heavy forces in open terrain. Attempting to meet both requirements prevented the design from succeeding; however, the design formed the basis for the Army's later search for a viable light division.

that purposely eschewed a branch orientation, later formally called the Concept Based Requirements System (CBRS), Division 86 was so named because 1986 was as far into the future as the Army's senior leadership could project the Soviet threat. Building on DRS, the new design initiative forced doctrine, organization, training and training literature to focus on new weapons and equipment.

The heavy division was designed to have flexibility, mobility, strength and resiliency to withstand and defeat the echeloned attack of Warsaw Pact armies. Superficially, it resembled the ROAD design, consisting of a division headquarters, three brigade headquarters, combat maneuver elements, a division support command, a reconnaissance squadron, division artillery and other support and service support units. However, it differed significantly from ROAD.

A fourth brigade-sized headquarters and an air cavalry attack brigade (ACAB) united all divisional aviation. Tank battalions were organized with four tank companies of three platoons. Mechanized battalions had a TOW antitank company and four com-

panies of three platoons each. Division artillery had increased firepower: three 155-mm battalions, one battalion of eight-inch howitzers, and nine general-support multiple launch rocket system vehicles. The Division Support Command (DISCOM) placed critical battlefield support functions in three battalions to provide direct support to maneuver brigades.

Division 86 used more than 40 major weapons or new pieces of equipment that had not been procured yet. Some were still in the developmental stages. The solution proposed by Department of the Army was to adopt the concept but continue with interim organizations using obsolete equipment until the new materiel became available. Additionally, the Army faced personnel shortfalls in fielding Division 86. Because of these problems, modernizing the heavy divisions was delayed for 10 years. In the end, Division 86 was too heavy to deploy and too light to fight heavy forces in open terrain. Attempting to meet both requirements prevented the design from succeeding; however, the design formed the basis for the Army's later search for a viable light division.



TRANSFORMATION

Fast attack vehicles (FAVs) developed in the HTLD were later employed to great effect by Special Forces during the Gulf War. Three-man FAVs are agile, heavily armed and operate at speeds up to 80 mph, but the dart board taped to the front of the vehicle at opposite bottom, offers a not-so-subtle comment by its crew on their vulnerability to Iraqi fire if employed improperly.



The HTLD was driven by concept rather than technology, a departure from previous Army efforts. To test organizational and operational concepts, the division used surrogate equipment until private industry could provide for its needs. Testing and adjustments continued in an effort to build a unit capable of being airlifted anywhere in the world and prepared to fight enemy armored forces with mobility and agility. . . . The test community opposed the 9th Infantry Division's test methodology from the beginning because it tested equipment, not concepts.

High Technology Test Bed, 1980-1988. While commanding the 3rd Infantry Division in Germany during the mid-1970s, General Edward C. Meyer became convinced that light infantry was necessary to fight in forested and urban areas. He believed the nation was faced with the possibility that it might need to go to war and the Army would not be able to get there. The Army needed powerful, mobile units that could deploy rapidly, then fight and win.

In June 1980, General Meyer, now the Army Chief of Staff, established a High Technology Test Bed (HTTB) to build a force capable of deploying to Southwest Asia on C-141 aircraft (C-5s were explicitly excluded). He sought high technology to reduce the need for a division's heavy equipment.

The test bed departed from usual Army practice by having the experimenting unit—the 9th Infantry Division—design, test and field itself, receiving support only from those developing concepts, materiel and training. The High Technology Light Division (HTLD) was driven by concept rather than technology, unlike previous efforts. To test organizational and operational concepts, the division used surrogate equipment until industry could catch up. Testing and adjustments continued in an effort to build a unit capable of being airlifted anywhere in the world and prepared to fight enemy armored forces with mobility and agility.

The emphasis on testing the HTLD shifted when General Meyer's successor as Chief of Staff, General John A. Wickham Jr., directed the organization of a light division in the Army of Excellence and the redesignation of the 9th Infantry Division as the High Technology Motorized Division to avoid confusion. As redesigned, the motorized division contained three maneuver brigades of nine maneuver battalions—five heavy combined arms battalions, two light combined arms battalions and two light attack battalions—and an air attack cavalry brigade designed and employed as a fourth maneuver brigade.

The test community opposed the 9th Infantry Division's test methodology from the beginning because it tested equipment, not concepts, even when equipment was not available. The Army was able only to field prototypes of some equipment, hamstringing the division's development. In addition, there were no supporting doctrine, TOEs, leader development programs or Army Training and Evaluation Programs (ARTEPs) for a motorized division. Most significant, the division could not fulfill its assigned roles—it was hollow in fact, if not on paper. Many believed the division, as it existed in 1983-86, was too heavy to be deployed as a light division and too light to successfully engage heavy forces of the Soviet Union, the major threat. Lacking Army-wide consensus after General Meyer's retirement, the HTTB did not survive.

7th Infantry Division (Light), 1983-1986. By 1983, despite the work being done in the 9th Division, force structure concerns persisted. With threats ranging from mid- to high-intensity combat with the Soviet Union to contingency op-

A review of Army reorganizations reveals several truisms. Reorganization imposed from above, in the absence of Army-wide support, will fail. Turf battles among agencies and contests between progressive and conservative factions are destructive and enduring. The most successful reorganizations involve consensus building and co-opting of senior leadership early in the reorganization process.

erations to terrorism, the Army recognized that it took long to get to potential battlefields because of air- and sea-lift shortfalls and high unit deployment profiles. European-based heavy divisions oriented on the Soviet threat, but the Army had no division to perform contingency missions on short notice. In June 1983, General Wickham ordered TRADOC to design a light infantry division (LID) deployable in 500 C-141 sorties, and in February 1984, the 7th Infantry Division at Fort Ord, California, reorganized as a light infantry division.

A LID General Officer Steering Committee was established to review and monitor progress ensuring that attention remained focused on the unit. Branch schools and centers participated in the design effort and prepared leader development and unit training materials, further contributing to an Army-wide commitment to the new division's success.

The LID proceeded quickly from idea to fielded unit. The division was given only enough support systems to operate in a low-intensity environment for 48 hours without external support. Designers reduced logistics, fire support, antitank and survivability assets. Whenever possible, they replaced organic capabilities with cadre personnel organized to accept corps augmentation quickly. The final design was an extremely lean, foot-mobile division.

The 7th Infantry Division gave the Army a viable force while expanding its operational possibilities. It deployed to Panama during Operation *Just Cause* and to Saudi Arabia-Kuwait for the Operation *Desert Shield* and *Desert Storm*. However, some criticized the division as being too light to face heavy forces, and others argued that it lacked tactical mobility, while still others said it emphasized combat power at support units' expense.

The design and fielding of the LID succeeded largely because General Wickham built a consen-

sus by involving many agencies in the process. He established as the "architect of the future" and charged it to design the unit and then market it to an Army concerned about hollowness and deployability. The Combined Arms Center served as the honest broker for the branch proponents in establishing a workable and acceptable force structure. In the end, the Army gained a credible contingency capability.

Force XXI / EXFOR / Experimental Division, 1993-1997. After the victory in the Gulf War and the collapse of the Soviet empire, emerging threats and the diverse missions to which ground forces were committed combined with the extraordinary growth of information technology to create a different world for the post-Cold War Army. These factors compelled the Army to reexamine its doctrine and force design.

In January 1993, Army Chief of Staff General Gordon R. Sullivan endorsed the concept of digitizing the divisions—linking combat elements with sophisticated computers, enabling units to share situational awareness, and allowing commanders to make rapid, accurate tactical decisions. General Sullivan formally initiated Force XXI, a term describing this redesign process, in March 1994, with the effort centered on redesigning the heavy division.

One of the Experimental Force's (EXFOR) most difficult tasks was synchronizing the force modernization plan, the applique (a prototype set of hardware and software providing common computer links in a combat brigade) plan, the training plan and the experimental plan. The precise sequencing and two-year compressed schedule left little room for missteps.

For the first seven months of 1996, the 4th Infantry Division's 1st Brigade was transformed and manipulated by various experts, specialists, contractors and consultants to build fundamental tactical skills and integrate the immature tactical internet (TI) into combat training operations. The unit had to master combat fundamentals and digital equipment simultaneously while training for the Advanced War-fighting Exercise (AWE) at the National Training Center (NTC), Fort Irwin California, a difficult challenge considering that three-quarters of the brigade's platoon leaders and sergeants were new to their positions.

The equipment's potential was obvious, but the new technology's immaturity affected all areas. However, even lackluster TI performance provided more concrete facts than leaders had previously imagined receiving. Additionally, waiting for fully functioning digitization before proceeding with the experiment would have meant an unacceptable delay.

The AWE's qualified success does not detract from its achievements. Without a highly visible,



A scale model of a tilt-rotor aircraft, built for the Army by the Vertol Aircraft Corp, awaits wind tunnel testing at a NASA facility, 1959.

Technology-driven reorganizations, such as the 11th Air Assault Division and Force XXI/EXFOR, are inherently more speculative in nature regarding enemy and theater and are likely to lie outside of the Army's institutional "comfort zone."

large-scale experiment, a TI—however fragile and immature—would not have been created in 1996. If the experiment had not proceeded, debate about digitization's effectiveness and its impact would have remained in the abstract. The analytical models supporting Force XXI and digitization were improved because of the test. Most significantly, the EXFOR affected the Army's culture by changing the terms of the digitization debate. Almost every part of the experiment challenged principles of Cold War Army culture. Experimentation did not answer all the questions, but it showed the practicality of many of the ideas.

On 12 separate occasions over the past 60 years, the Army studied its division structure with a view toward reorganization. Objectives, methods and degrees of success varied, but some common threads can be discerned. Each of the reorganizations addressed a specific need—to meet a specific threat, to utilize or accommodate new technology or to accommodate austerity in one or more areas.

These studies suggest that designing a force to meet a specific opponent on a known battlefield proved to be the surest path to success. The ROAD and Division 86 initiatives confronted fewer unknowns and enjoyed a wider level of acceptance within the Army than did other reorganizations.

Technology-driven reorganizations, such as the 11th Air Assault Division and Force XXI/EXFOR,

are inherently more speculative in nature regarding enemy and theater and are likely to lie outside of the Army's institutional "comfort zone."

Reorganizations that are intended to address austerity, be it shrinking manpower pools or lack of strategic transport, run the grave risk of creating a structure that is deployable but not "fightable." Since 1943, for example, the problems of inadequate combat power and sustainability have plagued every effort to design a light division, even when the reorganization procedures themselves went smoothly.

In testing a new organizational concept, it is essential that the concept and not the inherent fitness of the test unit functions as the factor that determines the test outcome. These case studies suggest that it is best to utilize an existing formation that is already proficient in fundamental skills. The smooth conversion of the 7th Infantry Division from heavy to light is an example.

If a new formation is to be assembled for test purposes, extra time should be allowed for the test unit to train. The 11th Air Assault Division and the EXFOR both provide examples of the difficulties that can be encountered if training time is not provided. The World War II armored division and the ROAD reorganizations allowed for systematic, progressive training.

Controlling the number of variables that may influence the outcome is an essential aspect of a

successful test program. Although a hastily created formation, the 11th Air Assault Division carefully controlled maneuvers to address specific issues. On the other hand, the World War II armored division and the HTTB used surrogate equipment and experimental doctrine, obscuring test outcomes and lessons.

As to the actual administration of the testing pro-

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Reorganizations that are intended to address austerity, be it shrinking manpower pools or lack of strategic transport, run the grave risk of creating a structure that is deployable but not “fightable.” . . . History suggests a cautionary note: attempts to streamline and lighten the division usually involve the shifting assets to other echelons and create a division that needs to be reinforced to fight effectively.

gram, the HTTB again serves as a negative example. The test unit formulated and conducted its own test program, leading inevitably to questions of credibility. In contrast, EXFOR used established test agencies, such as the NTC, lending instant credibility to the outcome.

Testing new organizational concepts produced varied results. The Pentomic Division test indicated a need for major modifications. Its numerous deficiencies were never adequately addressed and, ultimately, the concept failed. By contrast, the 11th Air Assault Division survived, despite the fact that its deficiencies could not be corrected immediately. EXFOR typifies a third possible outcome. Although test results were unimpressive, Army leaders recognized that the technology was still in its infancy and held great promise for the future.

Rarely, if ever, has the Army been able to re-source fully a new organizational concept. Every case study except one resulted in an appeal for more assets in the reorganized unit. In times of Army growth, not surprisingly, the new requirements were met (ROAD). More commonly, the introduction of new assets was incremental and prolonged, as in the case of Division 86. All too often, the Army proceeded with reorganization expecting units to do more with less. TRICAP suffered a different fate—the post-Vietnam drawdown led to the abandonment

of the reorganization and the elimination of the test unit. History suggests a cautionary note: attempts to streamline and lighten the division usually involve the shifting assets to other echelons and create a division that needs to be reinforced to fight effectively.

Technology influenced reorganization by pushing the process forward or by creating a demand. The Pentomic Division was a hastily conceived initiative pushed by new technology (atomic weaponry) but without a clear doctrine for its battlefield employment. EXFOR was also pushed by technology, but in this case the Army refrained from embarking upon wholesale immediate reorganization because the technology itself was still evolving. The advent of airmobility illustrates both points. New technology triggered the process and then the 11th Air Assault Division experiment spelled out the need for new technology and provided a sound basis for its eventual acquisition. The triangular division, the World War II armored division, and the Division 86 reorganizations were founded upon a clearly perceived doctrine that induced the development and acquisition of new technology. Additionally, these examples demonstrate that technologically induced change is usually incremental, not revolutionary.

While reorganization temporarily reduced a formation's readiness, less obvious was the impact upon the Army's overall readiness when a unit was designated as a test unit. Reorganization and deployability are incompatible. This is particularly true for a test formation, such as the 1st Cavalry Division, which struggled to stay deployable throughout the TRICAP test. The worst-case example in this regard is the Pentomic Division, which may well have been nonviable, even after its adoption.

In every case, the US Army had time to test and modify division structures before committing them to combat. In World War II, the time elapsed between the outbreak of hostilities and the deployment of US units allowed the Army to shape the development of doctrine and force structure based on others' experiences. Similarly, lessons learned from the ongoing Vietnam conflict helped guide the 11th Air Assault Division initiative.

No American division ever blatantly failed in combat, but all underwent structural modifications after commitment to battle. These modifications generally involved adding rather than removing assets suggesting that designers tend to underestimate the demands of combat.

A review of Army reorganizations reveals several truisms. Reorganization imposed from above, in the absence of Army-wide support, will fail. Turf battles among agencies and contests between pro-



An air-transportable, nuclear-capable Lance missile being manhandled into firing position at a field training exercise, September 1981.

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gressive and conservative factions are destructive and enduring. The most successful reorganizations involve consensus building and co-opting of senior leadership early in the reorganization process. The Army benefits from the existence of permanent testing agencies and facilities, as opposed to reinventing the wheel with each reorganization. And, lastly, battle punishes divisions that are too austere.

The HTTP, initiated by one Army Chief of Staff who chose not to work through established channels, never won acceptance in the Army at large. When that chief retired, there was no proponent to continue the effort.

Questions over proponency can escalate into institutionally divisive turf battles. The development of an armored division languished for a decade because no combat arm claimed proponency. The 11th Air Assault Division experiment, as part of a larger debate over airmobility, divided the Army into warring camps. While such contention may at times be the inevitable price of progress, clearly institutional feuds hurt the Army.

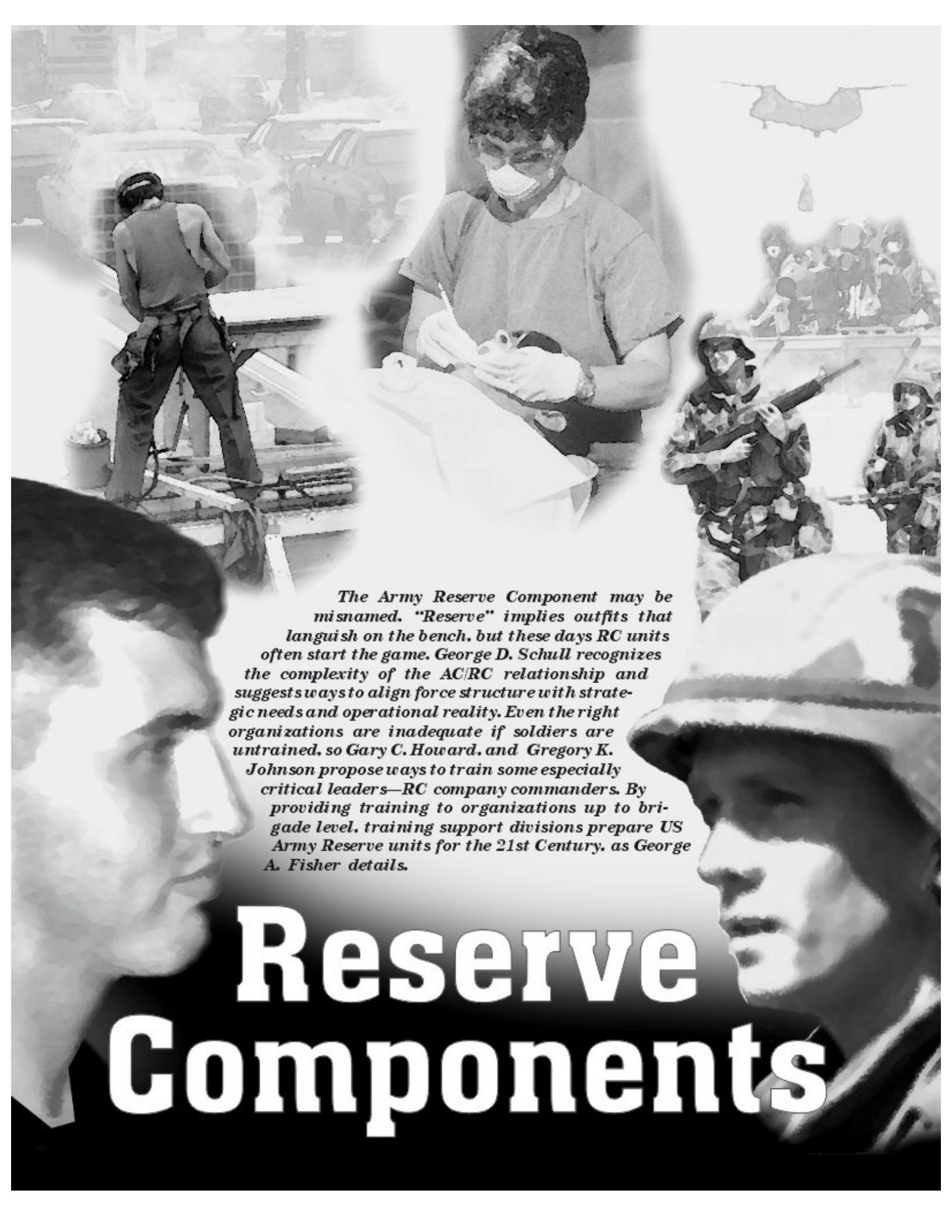
An excellent example of consensus building is that of the 7th Infantry Division's transition to light

configuration. Another is the ROAD. In both, the Army as a whole recognized the need for change, and many agencies participated in the conceptualization and testing processes.

Finally, every reorganization initiative since 1975 met with success, with one exception—the HTTP, the one initiative undertaken outside of the framework for creating doctrine that was established after the Vietnam War. TRADOC, the NTC and other existing agencies all have obvious and important roles to play in future reorganization efforts.

Three recommendations can be derived from this historical examination of Army reorganization efforts. First, have a clear and valid reason, based upon doctrine and battlefield realities, for reorganizing. Second, give an explicit sense of direction to the testing agency and to the Army at large so that the goal of reorganization is commonly understood. Third, set specific concrete goals for the testing agencies, and assure that the evaluation process is a valid test of the reorganization concept, not a rubber stamp. Following these procedures will help assure that the reorganization process succeeds both institutionally and on the battlefields of the future. **MR**

This article is adapted from Combat Studies Institute (CSI), Fort Leavenworth, Kansas, Report Number 14 published in January 2000. The complete report can be found at CSI's website, http://www-cgsc.army.mil/csi/PROJECTS/BCT_Concept_Paper.doc. Lewis Bernstein from the Combined Arms Center History Office and Christopher R. Gabel spent many hours researching and writing chapters and making sense of the insights garnered from CSI's research. Thomas M. Huber and Michael D. Pearlman also wrote chapters. Donald L. Gilmore edited the report. William G. Robertson, the project manager, and CSI Executive Officer Lieutenant Colonel Steve Clay put the team together and guided the process.



The Army Reserve Component may be misnamed. "Reserve" implies outfits that languish on the bench, but these days RC units often start the game. George D. Schull recognizes the complexity of the AC/RC relationship and suggests ways to align force structure with strategic needs and operational reality. Even the right organizations are inadequate if soldiers are untrained, so Gary C. Howard, and Gregory K. Johnson propose ways to train some especially critical leaders—RC company commanders. By providing training to organizations up to brigade level, training support divisions prepare US Army Reserve units for the 21st Century, as George A. Fisher details.

Reserve Components



Correcting the Force Structure Mismatch

Colonel George D. Shull, Missouri Army National Guard

OUR CURRENT National Security Strategy (NSS), National Military Strategy (NMS) and existing Army force structure bode ill for the future of the Army. As a result of the *Bottom-Up Review (BUR)*, the Army was right-sized and structured to meet the requirements to fight and win two major theater wars (MTWs). However, this force structure was never intended to support current deployment levels for military operations other than war (MOOTW). In fact, the *BUR* warned that, “protracted commitments to peace operations could lower the overall readiness of US active duty forces over time, and in turn, reduce our ability to fulfill our strategy to be able to win two nearly simultaneous major regional conflicts.”¹

Increased MOOTW deployments such as Somalia, Haiti and Bosnia have driven the Army’s operational tempo (OPTEMPO) to historically high levels. As prophesied by the *BUR*, the Army’s overall readiness is declining. Moreover, given our current NSS, a turbulent international community ripe with MOOTW opportunities and continuing fiscal pressures, it is unlikely the Army can expect a reduction to OPTEMPO in the near future. In short, the Army is faced with a strategy and force structure mismatch.

To compound this mismatch, the Army faces another pressing problem in its responsibilities to support joint warfighting. As joint warfighting doctrine continues to evolve and improve, deficiencies concerning critical missions such as rear area protection of the joint logistics and sustainment base and the need for a war-termination force have surfaced. These uniquely Army missions pose a difficult challenge. How can the Army correct these joint warfighting deficiencies in an environment which already overtaxes its capabilities and resources?

This article suggests solving these two problems by leveraging Army National Guard (ARNG) ma-

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neuver forces. First, the Army must change its strategy paradigm that precludes early deployment of ARNG maneuver forces to remain capable of responding to two nearly simultaneous MTWs. Next, this article recommends reorganizing at least two ARNG divisions into special purpose divisions (SPDs) to address joint warfighting deficiencies. Finally, this article addresses possible criticisms and benefits of these recommended strategy and force structure solutions.

Changing the Paradigm

Late in the Cold War, the Army’s strategy for using its Reserve Component (RC) forces was totally different from today’s. Born of the joint vision of General Creighton Abrams and Secretary of Defense Melvin Laird, the Total Force concept was embraced by an Army all too aware of the problems created by not using significant RC forces in either the Korean or Vietnam Wars. Without a draft and facing overwhelming Soviet ground combat power in Europe, the Army fully integrated its RC forces, including ARNG maneuver elements, for early deployment. Through initiatives such as round-out brigades, the Army merged RC maneuver units into its combat divisions. Moreover, through the extremely successful CAPSTONE Program, RC units

were linked to active component (AC) Army commands for early deployment and full integration into a Total Army. Extensive equipment modernization accompanied these focused RC missions, and greatly improved RC training and readiness for deployment throughout the 1980s.

General H. Norman Schwarzkopf commander of US Forces in Operations *Desert Shield* and *Storm* expressed his confidence in ARNG maneuver

RC units cannot attain the readiness levels of comparable AC units in 39 days of yearly premobilization training. Therefore, some degree of risk will always be associated with early deployment of RC units. The key question is: how much risk is acceptable? If the risk of deploying ARNG maneuver units early is within acceptable limits, the Army could benefit greatly.

elements in 1985, "Round-out is a fact of life. . . . The 48th Brigade, Georgia Army National Guard, is the third brigade of my division . . . expect them to fight alongside us. They have demonstrated (their capability) through three demanding rotations at the National Training Center. . . . They are, in fact, combat ready."²

Later, Schwarzkopf would receive no Guard maneuver elements as part of the forces employed to defeat Saddam Hussein. What had changed? Had ARNG maneuver readiness degraded so much in five years?

The answer has been a contentious debate topic for the past decade. For all the reports and statistics the active Army unearthed to support the ARNG maneuver unit's lack of readiness in 1990, the Guard community has provided equal evidence to counter the arguments.

As a result of this readiness furor, the Army no longer plans to use ARNG maneuver units early in future conflicts. The 15 ARNG enhanced brigades are not planned for deployment until 90 days into any future conflict. The remaining ARNG divisions have been shelved as a strategic hedge with no real relevance. It is time to abandon the conflict between the active Army and ARNG over Guard readiness and look at ARNG maneuver unit utility from a new perspective.

The search for a new paradigm properly begins by considering the connection between readiness and risks. RC units cannot attain the readiness lev-

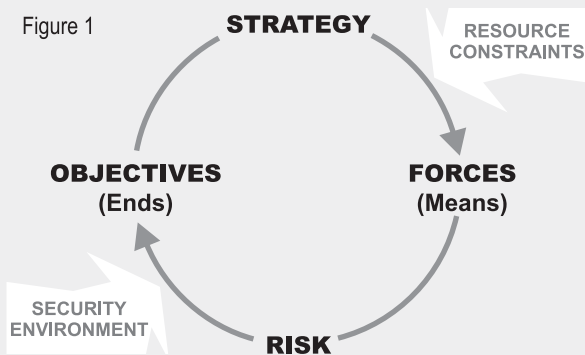
els of equivalent AC units in 39 days of yearly premobilization training. Therefore, some degree of risk will always be associated with early deployment of RC units. The key question is: how much risk is acceptable? If the risk of deploying ARNG maneuver units early is within acceptable limits, the Army could benefit greatly.

The Bartlett Model for strategy and force planning (Figure 1) can help clarify the concept of risk.³ More specifically, the Bartlett Model can help compare the risks of deploying RC maneuver units early during the Cold War to risks with their early deployment in today's strategic environment.

During the latter stages of the Cold War the Army's security challenges centered on halting and defeating a massive Soviet offensive into Central Europe. The Army intended to deploy RC maneuver and support forces very early at the C3 readiness level.⁴ The decision to deploy C3 units meant that the Army was accepting some degree of tactical risk that units could not perform some of the missions for which they were organized. Even during the defense build-up in the mid-80s, the Army maintained its strategy of early deployment of RC maneuver forces. In a security environment of high threat and increasing resources, the Army was willing to accept the tactical risks associated with deploying C3 RC units.

Today, the Army faces no peer competitor such as the massive Soviet Army, just a small group of ill-trained, ill-equipped regional armies.⁵ Further, Army and joint capabilities for precision deep attack of enemy forces have revolutionized the ground combat concept of battle space. No longer must the enemy be reduced in a desperate fight by maneuver elements along the forward line of troops (FLOT). Enemy maneuver units can now be reduced by deadly surface and air joint operational fires many miles from the FLOT. Although resource constraints have reduced the active Army's relative maneuver combat power by nearly half since the

Figure 1



During *REFORGER '85*, the 947th Medical Company (Colorado Army National Guard) drew, exercised and returned POMCUS equipment — and shipped its own vehicles from and to CONUS.



US Army

The Cold War decision to deploy C3 units meant that the Army was accepting some degree of tactical risk that units could not perform some of the missions for which they were organized. Even during the defense build-up in the mid-80s, the Army maintained its strategy of early deployment of RC maneuver forces. In a security environment of high threat and increasing resources, the Army was willing to accept the tactical risks.

Cold War, the Army remains the world's premier ground-combat force.

Yet with risks to maneuver forces greatly reduced, the Army is unwilling to accept the greatly reduced tactical risk of deploying C3 RC maneuver forces. Today, the Army illogically demands that RC maneuver units attain a C1 readiness level prior to deployment. By so doing, the Army disregards reduced tactical risks to maneuver forces on future battlefields resulting from quantum improvements in long-range precision weapons and joint capabilities.

Evidence supports a change in the Army's strategy for using its RC maneuver forces. Even though the Army has incorporated RC combat support (CS) and combat service support (CSS) units into war plans early, the Army still finds itself under significant stress due to increased MOOTW deployments. AC maneuver units deployed extensively to perform

MOOTW missions have their warfighting readiness degraded. The Army would struggle to respond to two nearly simultaneous MTWs if a division or larger portion of its maneuver forces were engaged in a MOOTW deployment. It would have been very difficult for the Army to have withdrawn the division from Bosnia for redeployment to either Saudi Arabia or Korea.

The Army could resolve this current mismatch between strategy and force structure by including ARNG maneuver forces for earlier deployment. By deploying Guard enhanced brigades at C2 or C3, sufficient ground combat power would be available to prevent the commanders in chief from having to redeploy AC maneuver forces engaged in ongoing MOOTW missions. In the current environment of acceptable risk, we must plan for earlier deployment of the 15 ARNG enhanced brigades to meet the

Active and Reserve Component soldiers clamp down transom beams on a 100-foot Bailey bridge during the train-up for the 49th Armored Divisions deployment to Bosnia, Fort Polk, Louisiana.



SFC Brenda Benner

With risks to maneuver forces greatly reduced, the Army is unwilling to accept the greatly reduced tactical risk of deploying C3 RC maneuver forces. Today, the Army illogically demands that RC maneuver units attain a CI readiness level prior to deployment. By so doing, the Army disregards reduced tactical risks to maneuver forces on future battlefields resulting from quantum improvements in long-range precision weapons and joint capabilities.

MOOTW tempo without jeopardizing a response to two nearly simultaneous MTWs. By further leveraging ARNG maneuver forces, the Army could address its other challenge to correct existing joint warfighting deficiencies.

Restructuring ARNG Divisions

The *BUR* describes the four phases of US combat operations—

- Phase 1: halt the invasion;
- Phase 2: build up US combat power in the theater while reducing the enemy's;
- Phase 3: decisively defeat the enemy; and
- Phase 4: provide for post-war stability.⁶

Current joint warfighting doctrine fully supports phases 1 and 2 of US combat operations. However, deficiencies have been identified in phases 3 and 4.

In phase 3, as available combat forces deploy forward for attack or counterattack, logistics and critical joint sustainment facilities in the rear area are left vulnerable. A 1995 *Congressional Research Study Report* captures the essence of this deficiency, "Joint doctrine presently directs Army, Navy, Air Force and Marine forces to fend for themselves, using assets deployed for other purposes, but potential threats to ports, airfields, logistic installations and command, control, communications and intelligence (C³I) facilities make that provision seem imprudent."⁷ Failure to correct this security problem could prove costly to joint forces in a future MTW. Loss of joint force lines of communication could cause premature operational or strategic culmination and failed offensive operations.

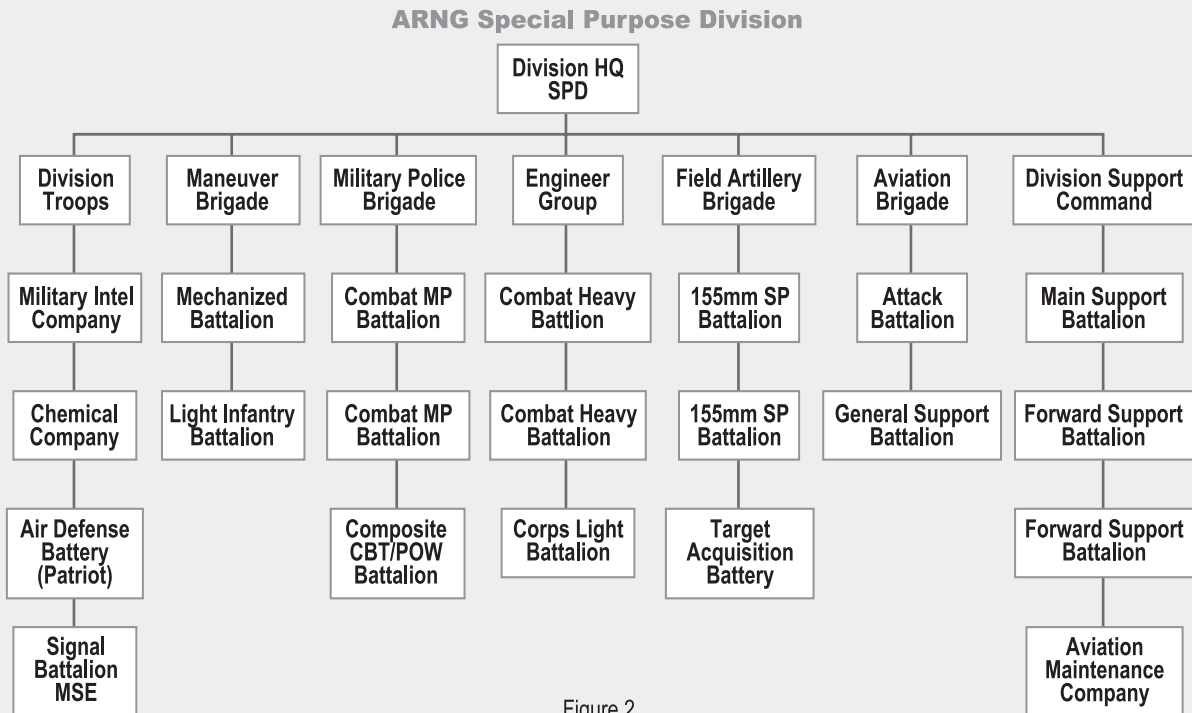


Figure 2.

The *BUR* addressed the doctrinal and practical need for war-termination forces during phase 4, “Finally, a smaller complement of joint forces would remain in the theater once the enemy had been defeated. These forces might include a carrier battle group, one to two wings of fighters, a division or less of ground forces and special operations units.”⁸ US joint warfare in Operations *Just Cause* and *Desert Storm* validated the role of stay-behind war-termination forces to protect the peace. Doctrinally, what kind of ground force is needed in phases 3 and 4?

One solution to these joint doctrinal deficiencies leverages ARNG divisions. As a result of the *BUR*, ARNG divisions are seen as excess to the need to win two nearly simultaneous MTWs. However, because of the off-site agreement, these eight divisions remain in the ARNG to provide force structure to support agreed-upon end-strength for the Guard.⁹ Recently, the Army decided that two ARNG divisions would be reorganized into CSS units to correct Army logistics and sustainment force structure shortfalls. The remaining six divisions are not considered in existing war plans and are viewed as a strategic hedge against a re-emergent Russian threat. Because of the remote chance of a reemergent Russian threat, two divisions could be reorganized into special purpose divisions (SPD) to correct the joint war-fighting deficiencies in

By deploying Guard enhanced brigades at C2 or C3, sufficient ground combat power would be available to prevent the commanders in chief from having to redeploy AC maneuver forces engaged in ongoing MOOTW missions. In the current environment of acceptable risk, we must plan for earlier deployment of the 15 ARNG enhanced brigades to meet the MOOTW tempo without jeopardizing a response to two nearly simultaneous MTWs.

phases 3 and 4 of future MTWs.

The proposed SPD structure differs considerably from current Army and ARNG divisions (See Figure 2). The maneuver arm of the SPD is less than one-third the size of current Army divisions; the artillery and aviation force structure is reduced; division general support forces, called “division troops,” have been downsized; and the division support command is reduced by one forward support battalion. However, engineer and military police capabilities have been greatly increased compared to current divisions. This proposed SPD organizational structure is about 25 percent (over 4,000 troops) smaller than the current Army and ARNG mechanized divisions. The substantial savings in troops and greatly reduced maneuver training costs could capitalize the added military police and

engineer forces and fund retraining costs associated with reorganization. Therefore, reorganization of the divisions should not result in increased costs.¹⁰

Functions During Phases 3 and 4

To explain employment of the SPD to correct joint warfighting deficiencies, phases 3 and 4 of a future MTW will be discussed, beginning with phase 3. The *BUR* describes operations during phase 3 as, "large scale, air-land counteroffensive to defeat the enemy decisively by attacking

As available combat forces deploy forward for attack or counterattack, logistics and critical joint sustainment facilities in the rear area are left vulnerable. A 1995 Congressional report captures the essence of this deficiency, "Joint doctrine presently directs Army, Navy, Air Force and Marine forces to fend for themselves, using assets deployed for other purposes, but potential threats to ports, airfields, logistic installations and C³I facilities make that provision seem imprudent."

his centers of gravity, retaking territory he has occupied, destroying his war-making capabilities and successfully achieving other operational or strategic objectives."¹¹

This phase of a conflict would likely entail threats to the joint force rear area of up to company-sized, bypassed enemy elements operating against logistics sites, communications facilities, rail networks, critical roads, ports and airfields. Enemy special operating forces and saboteurs would continue to operate, as they likely did in phases 1 and 2, against critical joint force rear facilities. Attacks on facilities and transportation networks could be expected from enemy ballistic missiles armed with conventional and possibly chemical warheads.

The SPD has unique capabilities to counter these threats. SPD engineer forces are robust enough to repair damaged facilities, critical roads and rail networks. With the combat power of the maneuver, aviation and field artillery brigades, a significant tactical combat force (TCF) is available to repel multiple company- or battalion-sized enemy threats. The artillery brigade can detect and neutralize enemy short and medium indirect fires at critical rear-area facilities. The Patriot battery can provide ballistic missile defense for the most critical rear facilities. The military police brigade has sufficient forces to

secure transportation networks and provide robust point security for critical facilities such as ports, airfields and C³I sites. The composite combat/prisoner of war battalion in the military police brigade facilitates the rearward movement and security of enemy prisoners of war as joint forces continue to attack.

The SPD could also be used in smaller scale contingencies (SCC) to protect joint force rear areas. Organizing the SPD into brigade-sized packages complies with the current joint force doctrine of adaptive packaging. Only those operating functions (in battalion-sized increments) needed to support the critical joint rear area protection mission would be mobilized and deployed in support of SCCs.

The SPD, organized into brigade-sized units, facilitates training at the brigade and battalion level. RC units so organized have historically demonstrated the ability to achieve readiness level C1 in 60 to 90 days and C2 just 30 days after mobilization. Because the SPD would primarily be employed at the battalion/battalion task force level when performing operational missions, risks associated with synchronizing complex brigade- and higher-level missions are avoided. In essence, the SPD would focus primarily on battalion-level defensive missions while securing the joint force rear area. The SPD headquarters is far more capable and robust to perform command and control of rear area security forces than is now being accomplished by Army rear area operation centers.

In Operations *Desert Shield* and *Storm*, an SPD could have been ready for deployment by 90 to 120 days before the start of what the *BUR* envisioned as phase 3. In a future MTW, SPDs could easily be ready for deployment by the time strategic air- and sealift become available after having deployed phase 1 and 2 forces. The SPD's organizational structure, position on the battlefield at the close of phase 3 operations and limited exposure to high-intensity combat operations, make it the best choice as a stay-behind war-termination force in phase 4 of a future conflict.

Joint Publication 3-0, *Doctrine for Joint Operations*, summarizes both the requirement for a post-hostilities force and the need for a smooth transition from conflict to post-conflict operations: "Because the nature of the termination will shape the futures of the contesting nations, it is fundamentally important to understand that conflict termination is an essential link between national



A squad from the 3d Armored Cavalry Regiment works its way through a threatening crowd in the simulated town of Zvornik at Fort Polk, Louisiana. The exercise was part of the 3d ACR and 49th Armored Division pre-deployment training for Bosnia.

Units employed along the FLOT in modern high-intensity offensive operations are battle-hardened warriors accustomed to combat ROE. The MOOTW mission of peace enforcement requires strict ROE and measured responses. Recent research surrounding this dichotomy illuminates the difficulty maneuver forces have transitioning from combat to peacekeeping.

security strategy (NSS), NMS and post-hostility aims—the desired end state.⁷¹²

What kind of ground force is needed in the post-conflict phase of an MTW? The current plan, elucidated by the *BUR*, calls for ground forces employed in the counterattack during phase 3 to be retained in theater to perform this critical mission. However, there are several reasons why this is not prudent.

First, maneuver forces and their associated support elements will have been used in high-intensity combat operations. Units employed along the FLOT in modern high-intensity offensive operations are battle-hardened warriors accustomed to combat rules of engagement (ROE). The MOOTW mission of peace enforcement requires strict ROE and measured responses. Recent research surrounding this dichotomy illuminates the difficulty maneuver forces have transitioning from combat to peacekeeping: “Recent training events and recent operations show that our service members may be able to shift from peace operations to mid-intensity combat, but that going from a combat mindset to a peacekeep-

ing one, without some retraining, is exceptionally difficult. In fact, it is so difficult, that whenever possible, the same force should not be used sequentially for combat and peacekeeping operations.⁷¹³

The SPD, having not been employed along the FLOT during phase 3, will not have operated under permissive ROE. There would be little difference in the threat intensity and ROE used by the majority of the SPD in phase 3, and what can be expected in phase 4 of a US joint force operation.

The second problem with using traditionally organized brigades of divisions as stay-behind forces involves functional capabilities. Missions required in phase 4 revolve around repairing damaged infrastructure and performing police and law enforcement functions until civil capabilities can be restored. Some capability will be needed to conduct small-scale combat operations in response to organized rogue elements not willing to abide by the peace or cease-fire. Traditionally organized maneuver forces, while long on combat capabilities, are woefully short on engineer and military police capabilities needed for phase 4. The SPD is specially

organized with the right kind of forces to perform missions most needed.

The last reason for using the SPD instead of phase 3 stay-behind forces involves strategic flexibility. By employing the SPD, phase 3 ground combat forces

Recently, the Army decided that two ARNG divisions would be reorganized into CSS units to correct Army logistics and sustainment force structure shortfalls. The remaining six are not considered in existing war plans and are viewed as a strategic hedge against the remote chance of a reemergent Russian threat. Two of these could be reorganized into special purpose divisions to correct the joint warfighting deficiencies in future MTWs.

can redeploy and reconstitute much sooner. Therefore, the Army could more quickly respond to another MTW, SCC or MOOTW mission.

The SPD provides a cost-effective, flexible, low-risk solution to correcting phase 3 and 4 joint warfighting deficiencies. Indeed, it lowers our current level of strategic risk. Moreover, the organizational structure of the ARNG SPD improves existing Guard capabilities to perform disaster-response and homeland defense missions for our state governors. The reorganized ARNG SPDs add value to the security of both our nation and our states.

Criticism of the SPD

Based on current strategy, the Army argues that we cannot afford to accept the risk of deploying ARNG maneuver forces at less than CI readiness levels. The response to this argument focuses on the concept of risk. Increasing MOOTWA deployments could eventually leave the Army with insufficient maneuver forces with which to respond to two nearly simultaneous MTWs—a huge *strategic* risk. However, by deploying ARNG maneuver forces early at the C2 or C3 readiness level, the assumed risk is *tactical*. Faced with few or no alternatives, the military wisely assumes tactical level risks to prevent strategic shortfalls.

Some might argue that ARNG force structure should be cut to free the resources to stand up two AC divisions to solve the Army's OPTEMPO and joint warfighting deficiencies. However, considering the costs of maintaining ARNG forces (about

25 percent of a comparable AC unit) massive ARNG force structure cuts would be needed (over 100,000 troops) to stand up two AC divisions. Such a drastic ARNG force reduction would drive ARNG force structure far below current historically low levels. State governors and local communities would not tolerate such a large ARNG force reduction. Political support for ARNG force structure cuts to stand up even one more AC division is improbable. Because strategy and force structure decisions must be reconciled with domestic political reality, further ARNG force structure cuts necessary to solve the Army's problems are not realistic.

Critics could also argue that the SPD is too radical a departure from traditional Army divisional structure. But consider the structure of our current Army divisions. Of the ten active Army divisions, only three are structured alike. Seven of the divisions are structured to perform seven different special purpose missions. Granted, each division is structured to perform offensive and defensive operations equally well. However, the SPD could still be structured to perform predominately the defensive operations required of phases 3 and 4 of a MTW/SCC. As joint doctrine evolves, services must alter traditional mind-sets and embrace specialized functions, organizations and missions.

Benefits of the SPD Concept

The strategy and force structure solutions in this article leverage available forces to answer today's challenges while positioning for tomorrow's opportunities. These solutions answer contemporary challenges by providing both a low-risk strategy and cost-effective RC maneuver force structure that allows the Army to continue accomplishing NSS-driven MOOTW deployments while providing sufficient forces for two nearly simultaneous MTWs. The SPDs position the Army for tomorrow's opportunities by providing alternatives with which the Army can, if required, further reduce active maneuver forces to capitalize research, development and acquisition for the Army's transformation.

The strategy and force structure solutions in this article also provide a stimulus for the Army to further embrace joint warfighting doctrine. This article recommends an alternative strategy and force structure that allows the Army to mirror the extremely successful adaptive packaging methodology used by the US Marine Corps to support joint warfighting.

Lastly, by leveraging ARNG maneuver forces,

the Army avoids the sunk costs of failing to exploit current ARNG leadership. Billions of dollars have been spent improving ARNG leadership in the past two decades. The current senior and mid-level ARNG leaders are the beneficiaries of massive spending to improve technical and tactical proficiency. Moreover, the infusion of AC soldiers into the ARNG as a result of AC reductions in the past decade has helped improve ARNG unit proficiency. The Army has a current window of opportunity to take advantage of these ARNG improvements to correct today's challenges, capitalize the next Army and lay the framework for the objective force.

Even though our current NSS and NMS bode ill for the Army, it need not be so. The Army's current strategy and force structure mismatch is a by-product of both our current NSS and the post-BUR force structure choices made by senior Army leaders. Embedded in those force structure choices is a strategy dramatically changed from the Cold War years. As a result of the current strategy for using RC maneuver forces, over half the ground combat power of the Army is effectively beyond the effective reach of Army and joint planners laboring to resolve the current strategy and force structure mismatch.

This article offers an alternative that allows decision makers to reconsider the relationship between readiness and risks associated with early deployment

The special purpose divisions provide a cost-effective, flexible, low-risk solution to correcting phase 3 and 4 joint warfighting deficiencies. Indeed, it lowers our current level of strategic risk. Moreover, the organizational structure of the ARNG SPD improves existing Guard capabilities to perform disaster-response and homeland defense missions for our state governors. The reorganized ARNG SPDs add value to the security of both our nation and our states.

of RC maneuver forces in today's security environment. The tactical risk of deploying RC maneuver forces early can forestall the greater strategic risk of having insufficient forces for response to two nearly simultaneous MTWs. Moreover, by tapping the unused potential of ARNG divisions, the kind of forces needed to correct our joint warfighting deficiencies are within reach.

By leveraging ARNG maneuver forces, the Army can have sufficient forces to continue MOOTW deployments, respond to two nearly simultaneous MTWs, improve our homeland defense response capabilities and correct the Army's joint warfighting deficiencies. **MR**

NOTES

1. US Department of Defense (DOD) Report, *Report of the Bottom-Up Review (BUR)* (Washington, DC: Office of the Secretary of Defense, DOD, 1 September 1993), 94.

2. Stephen L. Goff and Ralph E. Kahlan, "The Roundout Program: Is it Still Valid?" Unpublished Research Paper, (Carlisle, PA: US Army War College, 1990), 8.

3. Henry C. Bartlett, G. Paul Holman Jr., and Timothy E. Sones, "The Art and Strategy of Force Planning," in *Strategy and Force Planning* ed. Strategy and Force Planning Faculty (Newport, R.I.: Naval War College Press, 1995), 17.

4. US Army readiness reporting criteria states that units at C2 readiness can perform all missions with fewer than 42 days of post-mobilization training. C2 readiness equates to fewer than 28 days of training for full proficiency. C1 readiness assumes full proficiency with fewer than 14 days of training after mobilization.

5. The descriptors ill-trained and ill-equipped refer to the status of training and equipment of regional armies when compared to training and equipment of US Army forces, both Active and Reserve.

6. US DOD Report, *BUR*, 15-16.

7. Congressional Research Service Report for Congress, *Military Roles and Missions: A Framework for Review*, (Washington, D.C.: The Library of Congress, 1995), 62.

8. US DOD Report, *BUR*, 17.

9. In 1993 an agreement between the Department of the Army, US Army Reserve and Army National Guard established end-strength floors for the ARNG and USAR. Additionally, this Off-Site Agreement put the majority of Army RC CSS structure in the USAR and nearly all RC CS and combat units in the ARNG.

10. A comprehensive cost analysis of reorganizing ARNG mechanized/heavy divisions into SPDs is beyond the scope of this paper. However, preliminary analysis using National Guard Bureau Resource Management Model costing procedures indicates a savings of between 16 and 18 million dollars associated with the annual cost of training and maintaining an ARNG mechanized division as opposed to the proposed DPD. These substantial savings estimates, along with using existing ARNG engineer forces, reorganized ARNG maneuver forces, and existing military police forces suggest the SPD concept could be implemented with minimal or no National Guard Bureau budget increase.

11. US DOD Report, *BUR*, 16.

12. Joint Publication 3-0, *Doctrine for Joint Operations*, (Washington, D.C., Office of the Chairman, JCS, 1995), 1-9.

13. Winn Noyes, "Peacekeepers and War Fighters: Same Force, Different Mindset", Unpublished Research Paper (US Naval War College, Newport, R.I.: 1995), 8-9.

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Reserve Components Commanders and Training

Colonel Gary C. Howard, US Army Reserve, and
Major Gregory K. Johnson, US Army Reserve

I do not know when or where, but we will sometime place soldiers in harm's way, on short notice and ask them to defeat a determined and dangerous foe. When that happens, we should be satisfied that we have done our best to prepare them for the task at hand.

— US Army FY00 Posture Statement

WITH THE END of the Cold War, the threat to the United States has changed radically and the Army is changing to meet those new challenges. The US Army Reserve (USAR) and the Army National Guard (ARNG) must also evolve to ensure that they can perform their critical missions. Training and readiness have taken on new meaning in the current climate of a smaller Army based on power projection from a Continental United States (CONUS) platform. An ever-greater operational tempo and increasing numbers of deployments underscore the importance of Reserve Component (RC) readiness.

At its most basic level, readiness in the RC means obtaining and retaining well trained soldiers. Drill attendance and unit status report (USR) personnel ratings are the most visible manifestations of readiness. Key factors that affect personnel readiness, such as recruiting, retention and drill attendance, are direct functions of quality training.

Training systems developed in the Cold War era may not serve us well today. Historically, the RC was able to count on long lead times and moved at a slower pace. However, two singular weeks of annual training no longer ensures adequate training or readiness for today's changing requirements. Aggressive mission-essential task list (METL) training must be done during monthly inactive duty for training (IDT), leaving annual training available for real world support. In the post-Cold War Army, weekend drill training or IDT is the most crucial element of total training strategy.

The company commander is responsible for high-quality weekend training. Unfortunately, command-

ers are also responsible for almost everything else. However, with only 14 percent of the paid time of their active counterparts, RC company commanders are overwhelmed. In addition to METL training, commanders must deal with schools, personnel, pay, recruiting and retention. Active Component (AC) commanders do not deal with split-option recruits, basic training no-shows or maintaining personnel records. Nor do AC commanders recruit; trained soldiers fill their unit vacancies. The AC structure provides these and other support services to the company commander because these administrative tasks clearly divert training energy. These and other training distracters erode the RC com-

Some of the best training in the RC occurs with its AC counterparts whose long-range planning calendar is often no more than 90 to 120 days. In these situations, commanders must serve two masters: a wartrace commander pushing operations and an RSC commander who actually controls resources.

manders' ability to plan and conduct meaningful training. The commanders' inability to focus on high-quality METL training is compounded by a lack of doctrinal context due to the reliance on geography rather than function in determining RC command structure. As a result, much of the training is conducted without doctrinally-based multi-echelon focus.

The RC must update its systems with the aim of reducing the burden on its commanders. A number of specific steps will redistribute support functions, reorient resources and change regulations to give commanders more training flexibility. Some proposals are based on our own experience in a typical USAR transportation battalion of five assigned subordinate units. Other recommendations concern systemic changes that will help prepare the RC for this new era.

The strategy that we developed over three years in the 483d Transportation Battalion aimed at three specific areas: reduce administrative burden, develop training synergies between units and offer proper doctrinal guidance. As much as possible, we relieved our commanders of some nonproductive duties and gave them better tools to train and retain ready soldiers. In turn, they were able to focus more of their attention on METL training. In the process, we enhanced overall readiness (as measured by the USR and its supporting documentation), improved drill attendance and increased the units' capabilities, particularly among the battalion staff, to perform their wartime missions. These strategies have applicability to other RC units.

First, we reinforced the training relationship between the companies and the battalion by treating them as line companies. That sounds simple and obvious, but because the RC command structure below the Regional Support Command (RSC) level is diffuse, effective units frequently work outside of formal channels. Our method gave the companies definitive guidance from a dedicated planning and reporting structure and gave the battalion staff a clear mission. This process was far from altruistic on the part of the battalion. In peacetime, companies are training aids for a battalion staff.

Reducing the administrative burden is easier said than done. We decided early that using normal Army reports—those they would see on mobilization—would help significantly. Primarily, we emphasized six reports: USR, unit manning report (UMR), yearly training brief (YTB), training assessment module (TAM), evaluations and monthly training schedules. Of these, the YTB and USR received the most attention. Concentrating on a small number of normal reports reduced the usual problems of processing the reports and made them better management tools. Carefully examining the meaning of USR numbers revealed strategies to enhance readiness. For example, the battalion headquarters and headquarters company chose to defer filling vacant watercraft operator and engineer positions to avoid competition with the heavy boat company.

Extensive use of e-mail made a great difference. All primary staff and commanders used e-mail routinely, resulting in large de facto full-time staff that even held virtual staff meetings. Primary staff members contributed electronic status reports, which were accumulated and distributed by the executive officer. This written record of routine information was accessible to all and reduced meetings' frequency and duration. Actual staff meetings were more focused on training and operational issues requiring real-time discussion.

Next we took control of IDT. By pooling avail-

able resources, we found natural synergies that enhanced the quality of training. The resources at hand included the five integral companies and one detachment attached to the battalion for peacetime administration—all transportation-related units. In

C² in the RC has traditionally depended on geography rather than common function. However, generic and functionally unrelated C² headquarters are inherently limited in their ability to provide the kind of technical oversight, doctrinal guidance, training contacts, career progression and interactions that are vital for RC units in an era of shortened planning cycles and greater interaction with other AC and RC units.

addition, the bay area is rich in other transportation resources: an excellent natural harbor, outstanding port facilities, a large population base and several transportation units from the other services. This critical mass of soldiers, equipment and functionally related units combined with the local resources for outstanding training opportunities and our own "center of transportation excellence."

Our center of excellence had many advantages beyond the opportunities for high-quality IDT. Using the battalion as a point of contact also enhanced communication with the doctrinal components. Training at a distance became more efficient, and valuable doctrinal guidance could be used more effectively which helped our commanders obtain access.

As is true in most population centers, the San Francisco Bay area contains RC units from all of the other services. These transportation-related activities include a US Naval Reserve (USNR) cargo handling battalion (essentially stevedores) and access to the maritime administration (MARAD) reserve fleet ships. The US Marine Corps Reserve has a beach and terminal operations company (essentially a terminal services company). The USNR and US Coast Guard Reserve (USCGR) have joint units for harbor defense. And the US Air Force Reserve has an affiliated program for air-load training. We capitalized on each of these sister-service capabilities to leverage our own resources.

Innovative use of all local resources allowed us to conduct significant transportation exercises with essentially no funding beyond that normally allocated for IDT. Our IDT field training exercises (FTXs) occurred at multiple locations in Northern California. In one case, part of the battalion's annual training was scheduled over a three-day drill weekend for

the battalion's five assigned companies so the staff could train with a full-up battalion without capitalizing on all of the companies' annual training time.

We proactively sought wartrace and doctrinal guidance from higher headquarters to put our training program in proper perspective and keep us training on the important aspects of our mission. Although this is an obvious approach, it is often beyond the ability of a company commander, particularly with the enormous number of competing demands. This problem can be exacerbated when non-functionally aligned higher headquarters are unaware of whom to contact. We cultivated wartrace relationships for each of our units (transportation, engineer and quartermaster) through several devices, including battalion dinings out, video teleconferences with wartrace headquarters for YTBs, invitations to general offic-

ers and by hosting doctrinal and wartrace conferences. By collecting accurate doctrinal guidance, we were able to help the commanders plan, conduct and evaluate their METL training.

No training opportunity was overlooked. Training and operational directives always came in five-paragraph warning, operation and fragmentary orders. Staff noncommissioned officers conducted formal information and decision briefs for the battalion staff and commanders. This type of staff training reinforced the relationship between the companies and the battalion and gave clear guidance for intensive and meaningful exercises.

As a battalion, we attempted to maximize the flexibility of the current RC structure and regulations in order to support our initiatives. Our strategy produced specific documented successes in an RC

Training Support XXI

Lieutenant General George A. Fisher, US Army, Retired

Today's Army is at its lowest force structure size since World War II and its missions continue to grow dramatically. The Army's success in this environment will depend greatly on fully leveraging the capabilities of the Reserve Component (RC). This is not only an operational requirement; it is necessary to continue to build trust and confidence between the active and RC force. The Army has begun a host of initiatives to strengthen this relationship and build its composite capability.

One of these initiatives is Training Support XXI (TSXXI), an innovative new structure to revolutionize training support for the Army National Guard (ARNG) and the Army Reserve (USAR). This concept provides a streamlined, efficient structure for training support; exports the combat training center (CTC) methodology at platoon and company level; and builds tri-component organizations focused solely on training. This initiative has the potential to enhance training proficiency and build an Army partnership for the future.

The previous training support structure evolved piecemeal over 20 years, resided in multiple chains of command and was hard to coordinate and focus. Most important, RC commanders were required to deal with a host of different organizations to obtain support for training. Due to operational tempo challenges, support from active divisions was often accomplished by a wide variety of units. It was extremely difficult to achieve consistent partnerships at battalion and brigade level.

The new structure fields an organization specifically designed to accomplish training support. A training support brigade (TSB) commander owns the structure to support most units in his area of operations. This organization provides RC commanders one-stop shopping for all their training support needs. The TSB commander controls the structure providing the support, so the agreements can be made at the lowest possible level.

As is the heart of the new concept, the TSB is designed to operate as an "operations group," similar to the National Training Center (NTC) or the Joint Readiness Training Center (JRTC). The TSB is composed of battalions, which are really observer/controller (OC) packages like those at a combat training center (CTC). Its mission is to provide CTC-quality lanes and training support at platoon and company level to the ARNG and the USAR. In essence, TSB provides at platoon and company level what the CTCs provide at battalion and brigade level—enhanced leader development and unit proficiency. The application of these same principles to RC platoon and company training will prove dynamic as well. The mobile, deployable TSB brings these lanes to RC units at their home training areas. The experience levels in these TSBs are significant. In one TSB alone, 945 NTC rotations are represented—on average each OC has over six CTC rotations. The potential to coach, teach and share lessons is superb.

The tri-component nature is another fundamental of this new structure. The goal was to leverage the strengths of each component to build an integrated structure that would function as a unit. This practice will expand experience across the force and produce echelons of leaders from each component who have served together in a unique organization. That experience will foster trust and confidence among the components as these leaders mature and move to other responsible positions.

The new structure also has the potential to make training more realistic. It can provide the exercise control structure to help administer an exercise so the player unit headquarters can concentrate on its own mission essential tasks. This exercise control structure can also account for training tasks that every unit should perform during the exercise. If the task is not occurring naturally, the control structure has the resources to generate the event

transportation battalion. We believe these initiatives in conjunction with some others may significantly improve the readiness of RC units as part of America's Army. However, the existing framework was developed when the world and the RC were different. We need to continually examine our organization and systems to ensure that they support unit commanders and give them more tools with which to keep their units full, deployable and ready.

Although several aspects of our strategy will translate easily to other RC units, we believe this is only a small beginning. RC commanders face an overwhelming burden, and they need more relief than an isolated battalion or brigade headquarters can provide. To this end, we offer the following systemic measures for consideration.

Align units functionally. Command and con-

Aggressive METL training must be done during monthly inactive duty for training (IDT), leaving annual training available for real world support. In the post-Cold War Army, weekend drill training or IDT is the most crucial element of total training strategy.

trol (C²) in the RC has traditionally depended on geography rather than common function. However, generic and functionally unrelated C² headquarters are inherently limited in their ability to provide the kind of technical oversight, doctrinal guidance, training contacts, career progression and interactions that are vital for RC units in an era of shortened planning cycles and greater interaction with other AC and RC

at the right time and place. This is a unique resource that major commands, adjutants general, and Reserve Support Command commanders can use to facilitate exercise design. This technique also places units in a multiechelon wartime context rather than a pure lane situation and optimizes lessons learned. Essentially, the TSB can replicate true battlefield geometry using integrated lanes and have each unit function where it naturally would on the battlefield. Each unit can have its own OC package that will remain throughout the exercise to optimize the feedback process.

This structure is robust enough to also provide training support to units that are not in the force support packages. Any RC unit should go to its local TSB commander with training support needs. If the local TSB commander cannot meet the requirement, the training support division (TSD) commanders can cross-level and reinforce across TSB boundaries to accomplish the desired support. The TSD plays a key role in the coordination and synchronization of the TSB and simulation brigade effort.

One of the important experience factors for the active force over the past 15 years has been the influx of CTC-trained officers and noncommissioned officers (NCOs) into units. That potential now exists for the ARNG. Each adjutant general can attach any number of Mobilization-Day officers or NCOs to a combat arms OC package for a year or two. Those attached will be school-trained as OCs and have an opportunity during inactive duty training (IDT) and annual training (AT) to actually perform as OCs for units in training. After several years, they would return to their units as an OC train-the-trainer, and also to help cross-level the best techniques from several years of observation.

This same opportunity exists for the USAR. The combat service support OC packages in this structure are

primarily Army Reservists. After three years of OC duty, they could be moved (geography permitting) to a local table of organization and equipment (TOE) unit taking the same experience factors with them. Over time, this would help increase the experience level in RC units and reduce post-mobilization training time. As we expand our thoughts on how to "team" AC units with RC units, again the TSXXI structure can play a role. When an AC unit and an RC unit decide to train together, TSXXI can help with the exercise control structure and provide the OC packages for the RC units. Without the requirements for this overhead, AC units can think more aggressively about partnership training.

TSXXI merges the Bold Shift philosophy with CTC methodology and fields an experienced tri-component team to implement it. In its first year this structure is achieving 50 percent more support with 25 percent less structure and 10 percent less cost. In addition to supporting good pre-mobilization training, it also helps RC units prepare for operational missions worldwide once they are identified for mobilization. For the first time, we have streamlined, integrated structure providing dedicated support to our RC units. Soldiers are training together to plan and execute as an AC/RC team. This partnership will pay huge dividends in the future. **MR**

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Our method gave the companies definitive guidance from a dedicated planning and reporting structure and gave the battalion staff a clear mission. This process was far from altruistic on the part of the battalion. In peacetime, companies are training aids for a battalion staff.

units. Modern communication has greatly reduced the administrative advantages of geographic proximity to the C² headquarters. In a perfect world, all units would be functionally aligned. The minimum should be that functional higher headquarters are actively involved in reviewing YTBs and USRs and in providing training guidance to units.

Make the training environment more flexible. Commanders face increasing conflicts between requirements to prepare budget estimates for future training and seize short-notice opportunities. Some of the best training in the RC occurs with its AC counterparts whose long-range planning calendar is often no more than 90 to 120 days. In these situations, commanders must serve two masters: a wartrace commander pushing operations and an RSC commander who actually controls resources.

Establish administrative holding companies. RC commanders spend an inordinate amount of time

on administrative actions that their AC counterparts never see. Dealing with unqualified soldiers (split-option soldiers, soldiers awaiting shipment for basic training and other unqualified soldiers) is a significant part of this burden. Responsibility for these unqualified soldiers should be assigned to an administrative holding company at each major support command (MSC) under the command of an RSC holding battalion. The holding company might be an organization to which the unqualified soldiers were actually assigned. In that case, the holding company could ensure preparation of soldiers for qualification training by conducting basic soldier training, such as land navigation, physical training, weapons maintenance, drill and ceremonies and uniform wear, before basic combat training. In another variation, the holding company would assist the commander by overseeing the administrative paperwork while the soldiers were assigned to their normal unit. In either case, they would serve as the primary interface with the recruiting command and school brigades and ensure the publication of timely and accurate orders. The holding company would greatly reduce the current burden on the commanders.

Create centers of excellence. These centers for combat service support and service support functions and skills would bring together functionally related units in combination with additional local resources, such as school battalions, special training facilities and attractive geographic features like units from the reserves of the other services. In addition, AC-to-RC support functions such as readiness groups and training brigades could be concentrated at the centers. Commanders would benefit from assistance in planning challenging training. Synergies resulting from the concentration of resources will result in enhanced training and readiness for all units. The advantages for recruiting, retention and effective training are several and compelling:

- *More effective IDT training.* Typically, an RC unit has a limited amount of equipment and limited abilities to conduct realistic training. To be truly effective, IDT requires the right units, soldiers and equipment. Centers of excellence would provide this concentration of needed resources.

- *Improved dissemination of new doctrine.* With multiple units at a single location, communication with the doctrinal component and training at a distance become more efficient, and valuable resources can be used more effectively. Commanders would have better access to new technical guidance.

- *Enhanced career progression of soldiers.* Moving soldiers to higher command echelons broad-

ens their professional growth in a given career field. This flexibility is crucial for retaining highly skilled soldiers who must, under most conditions, drill near their home.

Expand recruiting areas. The same 50-mile radius that protects soldiers from being required to travel excessive distances to drill limits recruiting efforts. Even in large metropolitan areas where driving long distances to civilian employment is routine, recruiting command will not recruit soldiers who live more than 50 miles from the reserve center. Certain high-skill, short-supply MOSs should be recruited nationwide, such as vessel masters and chief engineers, surgeons, operating room nurses and chaplains. The time and resources required to recruit and train soldiers, particularly the high-skill, short-supply MOSs, make it imperative that we retain these soldiers in troop program units.

Current drill attendance regulations make it difficult for soldiers to travel more than minimal distances to drill. Soldiers must pay their own travel to IDT. Existing regulations or local policies limit unit's ability to tailor drill schedules for valuable soldiers living at a distance from the unit. Several changes can help:

- Encourage commanders to schedule multiple unit training assembly-10s (MUTA-10s), which equal five training days, to make long-distance travel by the soldier worthwhile and to take advantage of specific training opportunities. This can work. Our heavy boat company has an LCU-2000 crew that lives in Houston, Texas and the crew pays its own way to drill in Stockton, California. They travel 2,500 miles to drill at their own expense four times per year for a MUTA-8 (four training days). We guarantee them that they will sail every time and they have never missed a drill.

- Form detachments that would train on a separate drill schedule to accommodate soldiers travel-

ing great distances.

- Allow some positions to be filled for mobilization purposes with fully qualified Inactive Ready Reserve soldiers.

- Consider a travel subsidy for specific critical MOSs. Implement a program to pay all or part of the drill travel for soldiers with particular skills. This cost-effective measure would allow the Army to retain soldiers with unique or critical skills or expen-

Wartrace relationships were cultivated for each of our units (transportation, engineer and quartermaster) through several devices, including battalion dinings out, video tele-conferences with wartrace headquarters for YTBs, invitations to general officers and by hosting doctrinal and wartrace conferences.

sive training the Army has already funded. For example, a vessel master (880A1) costs more than \$100,000 to train. At a government rate of \$200.00 per month for air fare to and from drill, the master would cost the government about \$2,400 per year or less than \$50,000 for a 20-year career, far less than finding and training a new master.

Each of these recommendations would help reduce the great burden on our RC company commanders and allow them to focus more effectively on elements of training and retaining good soldiers. In fact, we have seen several of them bear results in practice—mostly it is a matter of mindset. As we continually review our requirements to meet soldiers' needs and cull out what is unnecessary, we keep our soldiers working and coming back for more—we all win. **MR**

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ROTC

Developments and Prospects



Colonel Arthur T. Coumbe, US Army Reserve

Times change. So do resilient organizations, but they never forsake the fundamentals that make them great. Over the years the Reserve Officer Training Corps surged to meet the nation's needs—so much so that it now provides the bulk of the Army's active-duty officers. Arthur T. Coumbe explains some of the recent changes to standardize training and quality, strengthen command and control, empower local officials and provide the Army with great lieutenants.

SINCE ITS ESTABLISHMENT in April 1986, the US Army Cadet Command has been transformed from a decentralized organization turning out a highly variegated group of junior officers into a centralized command producing lieutenants of high and, given the intellectual, social and cultural diversity of the Reserve Officers' Training Corps (ROTC) institutional base, uniform quality. Three things helped transform precommissioning preparation—standardized training, improved leadership assessment and development, and an enlarged and improved command and control apparatus. The consensus among senior army leaders is that ROTC lieutenants accessed into the Army after 1986 have been the best in the program's 83-year history.¹

The ROTC program has not fared as well quantitatively as it has qualitatively. In the past decade, officer requirements have dropped sharply—from 8,200 in 1989 to just 3,800 in 1999. Additionally, the propensity of college-aged youth to join the military or enroll in the ROTC has dropped even more sharply, and throughout the 1990s, the program has struggled to meet its production mission. To accommodate the post-Cold War world, the command has attempted to preserve relevant aspects of the program and redesign other parts to better prepare the ROTC and its cadets for the demands of the new century.²

Personnel constraints have posed some of the most formidable problems for the ROTC program. As the Army has made deep cuts in table of distribution and allowance (TDA) organizations such as the Cadet Command to fill line units, the ROTC program dropped from 416 units and more than 2,400 full-time officers in 1989 to 270 units and approxi-

mately 1,300 full-time officers in 1999. The reductions have strained ROTC cadre in all functional areas but none more so than in recruiting since recruiting is the only truly discretionary part of a unit's routine.³

Alternative staffing. A number of "staffing alternatives" have been tested to try to find ways to alleviate the situation, one of which uses contract ROTC instructors. A test of this option began in School Year 1997-1998, with MPRI, a professional services firm headquartered in Arlington, Virginia, providing the instructors. Cadet Command added some restrictive clauses to the MPRI contract relative to the use and quality of the retiree and reservist instructors, including requirements to meet Army height and weight standards and pass the Army Physical Fitness Test (APFT). The contract also stipulated that officer applicants must have served at least eight years and enlisted applicants at least 15 years to be eligible for employment. Experience as a company commander, in the case of officers, or as a platoon sergeant, in the case of noncommissioned officers, was listed as a highly desirable characteristic. In addition, the contract specified that no one who had been retired for more than two years could be hired.⁴

The results have been encouraging. The RAND Corporation, the organization responsible for evaluating the test, has reported that units participating in the experiment were performing every bit as well as other units. ROTC cadre and senior officers in the chain of command have given the contract instructors high marks.

In another simultaneous staffing alternative test, reservists assigned to Troop Program Units (TPUs) have been used as ROTC instructors. The distribution of reserve units, the skills and qualifications of available reservists and other factors have contributed to mixed results. Most significantly, work scheduling restrictions sacrifice one of the most important aspects of the ROTC program—the frequent and regular face-to-face interaction between cadet and instructor.⁵ Still, many feel that the TPU option has potential. While drilling reservists may not always be able to replace full-time cadre, they can often effectively augment them, doing such tasks as planning and overseeing specific events and running field training exercises. A final decision on this staffing alternative will be made at the end of School Year 2000-2001 when the test is scheduled to conclude.⁶

Organizational streamlining. Organizational streamlining began in 1992 when one of the four region headquarters was eliminated. By 1996, five of 18 brigade headquarters had been eliminated. In 1997 the region headquarters sizes were cut in half and some of the spaces were transferred to the national and the brigade headquarters. The command realized a net savings of 121 spaces.⁷

More significant than the number of spaces saved, however, was the functional realignment that took place. As a result of this realignment, the regions retained their command and control responsibilities but lost many of their administrative and logistic functions. Brigades, on the other hand, took on more oversight responsibilities. Cadet Command headquarters assumed more centralized control over administration and logistics, resulting in more standardization and improved quality control.

A number of "staffing alternatives" have been tested to try to find ways to alleviate the personnel reductions, one of which uses contract ROTC instructors. The results have been encouraging. The RAND Corporation, the organization responsible for evaluating the test, has reported that units participating in the experiment were performing every bit as well as other units.

Automation. Structural streamlining would not have been feasible without the command's simultaneous automation. E-mail now links together all command echelons and office software is standardized. Forms, along with regulations, policy guidance, publications and training support packages are available over the Internet. This evolving Internet-based information system, the Cadet Command Information Management System (CCIMS), provides for more record and document visibility. Reports that previously took weeks or months to reach units are now accessible almost as soon as they are completed. At advanced camp, enhanced data processing capabilities significantly reduces paperwork and administration time by several orders of magnitude.

Selective decentralization of authority. Cadet Command has mitigated personnel shortages by transferring decision-making authority from the national to the battalion level. This decentralization has proven particularly helpful in administration, where the authority to make certain

personnel decisions (deferments for attendance at advanced camp, some enrollment eligibility waivers and scholarship termination actions) has expedited processing and eliminated some forms entirely. Correspondence processing was streamlined as well with actions that formerly passed through brigade and region headquarters now flow directly from battalion to national headquarters.⁸

Technology enhanced instruction. The command has also embraced technology-enhanced instruction to mitigate the effects of lower budgets and staffing levels. In 1998 the command established a high-tech test bed of six host ROTC units to test various distance-learning methodologies. Participating schools (the University of Delaware, West Virginia University, the University of Wyoming, the University of Southern Mississippi, Pennsylvania State University and the University of Washington) received liquid crystal display projectors and additional computers to conduct the experiment. The test is yielding particularly promising results at the University of Delaware, where video-conferencing has been combined with "video streaming" over the Internet to transmit military instruction to two partnership institutions—Salisbury State University and the University of Maryland, Eastern Shore. Cadets at these

latter two schools can now access ROTC classes at their own leisure.

Training. Within the ROTC program, no other functional area has seen more improvement over the past five years than training. The consolidation of advanced camp at Fort Lewis, Washington, in 1997, has been the principal factor in this improvement. This initiative permitted a common application of standards under identical conditions, resulting in a more uniform ROTC product and a more fair accessions process.



US Army



Additionally, that same year advanced camp was shortened from six weeks to five without any degradation of training, primarily by eliminating time-off and downtime. As a by-product of the consolidation, Fort Bragg, North Carolina, regained valuable training space and the Army saved 2,500 summer camp support spaces and an estimated three million dollars.

Advanced camp training has become more challenging as well. While summer training was tough, stressful and demanding, it had become predictable—tactical exercise operations orders and battle drill scripting were more a reflection of cadre efforts than cadets' ability. Since the “unscripting” of advanced camp in the summer of 1997, variables in the squad and platoon tactical exercise lanes make cadets react to unanticipated situations. The patrol at the Army's Ranger School replaced the battle drill as the advanced camp exercise model.⁹

Abetting and encouraging cadets to be more multidimensional has been another of the command's priorities. Preparation for advanced camp had become so intensive and time-consuming that it tended to crowd out other important aspects of cadet life, such as academics and extracurricular activities. The command took several steps to restore balance in the program and in cadets. First, the command revised the cadet evaluation system (CES) to award more credit for participation in activities outside of ROTC. Second, the time demands on cadets during the academic year were reduced by restricting field training exercises to one per semester. Third, mini-camps designed to prepare cadets for advanced camp were eliminated. Finally, certain military skills tests, such as rifle marksmanship, were changed from scored to pass or fail events. The emphasis on more efficient and effective training has resulted in better summer camp performance.¹⁰

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A new program ties scholarships to individual schools giving the local professor of military science (PMS) authority to select scholarship winners and control costs. With the new authority, the PMS gained more flexibility and a greater ability to exploit the local recruiting environment. It is also expected that the new scholarship program will change the profile of the scholarship winner; in the new system, more weight will be attached to leadership potential and motivation for military service and somewhat less to standardized test scores.

Recruiting and retention. As the propensity for military service among college-age youth has dropped, financial incentives have assumed an increasingly important place in ROTC recruiting and retention efforts. In 1999, 69 percent of contracted ROTC cadets were scholarship recipients, up from 33 percent a decade ago. To improve the scholarship selection process, Cadet Command introduced the Campus-Based Scholarship Program (CBSP) in the spring of 1998. The new program ties scholarships to individual schools giving the local professor of military science (PMS) authority to select scholarship winners and control costs while replacing the complex four-tier system with one level of award (which has a \$16,000 ceiling). With the new authority, the PMS gained more flexibility and a greater ability to exploit the local recruiting environment. It is also expected that the new scholarship program will change the profile of the scholarship winner; in the new system, more weight will be attached to leadership potential and motivation for military service and somewhat less to standardized test scores.¹¹

Boosting the monthly ROTC stipend has been a key part of Cadet Command's retention strategy. The stipend was increased from \$100 to \$150 per month in the fiscal year (FY) 1995 Defense Authorization Bill, the first such increase since November 1971, and it was raised again to \$200 per month beginning in FY 2000.¹²

To strengthen its recruiting efforts and leverage outside resources, Cadet Command has entered into a cooperative relationship with the US Army Recruiting Command (USAREC). The new arrangement calls for greater information exchange, more resource sharing (such as influence funds, advertising vans, Old Guard, Golden Knights and Marksmanship Team use of the USAREC distribution facility at Fort Knox) and a closer partnership between the ROTC battalions and the local recruiting ele-

ments. In addition, an innovative initiative—the on-campus recruiter program—began testing in January 2000 at 16 different ROTC battalions. At test schools, recruiters will work out of local ROTC units and recruit for both officer and enlisted requirements.¹³

The last several years have been a defining period for the Army ROTC program. During this time, Cadet Command has adapted to the conditions and demands of a changing culture and generation while preserving the relevant aspects of its heritage. While performing this balancing act, the command has experimented with alternative staffing models, streamlined its headquarters structure, improved training, consolidated advanced camp, automated its administration and command and control systems, decentralized decision-making authority, revised its scholarship selection system and reenergized its recruiting and retention efforts. It is too early to tell how effective the recent changes will be in the long run because results from a commissioning program like the ROTC can take two to four years to materialize in the force. Certainly, however, amid the changes and adjustments over the past several years, the ROTC has proven to be the enduring, essential source for the Army's Active, Reserve and National Guard commissioned officers. **MR**

In 1998 the command established a high-tech test bed of six host ROTC units to test various distance-learning methodologies. The test is yielding particularly promising results at the University of Delaware, where video-teleconferencing has been combined with "video streaming" over the Internet to transmit military instruction to two partnership institutions—Salisbury State University and the University of Maryland, Eastern Shore.

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Logistics

Michael S. Tucker explains the enormous scope, complex coordination and critical implications of the Army's floating brigades. Getting the appropriate equipment aboard monstrous vessels—then maintaining, exercising and rotating it—is a logistic feat that maneuver leaders must understand. Getting the troops to theater and marrying them with the right vehicles and supplies may take months of coordination. But soldiers are not sufficiently equipped until they are protected from debilitating disease. As Patrick W. Kelley recounts, contagions that Americans consider conquered—or have never heard of—threaten deployed soldiers, operations and potentially entire communities. Less ominous, but still of concern, are the results of combat stress and battle fatigue. Michael E. Doyle introduces commanders to medical detachments specifically designed to identify, treat and return to duty stress and fatigue casualties.





Army Pre-positioned Stocks

Lieutenant Colonel Michael S. Tucker, US Army

In war, nothing is achieved except by calculation. Everything that is not soundly planned in detail yields no results.

— The Maxims of Napoleon

THE BRIGADE OPERATIONS officer met us immediately upon our return from the National Training Center (NTC). During the short ride back to post, he briefed the brigade's leadership on the division's pending deployment to Kuwait which had been directed in response to Saddam Hussein's latest spat with the United Nations Inspection Team. The advance party had already departed. Our brigade was designated as Force Package Two (FP2), which meant that we would draw equipment from Army Pre-Positioned Stocks, (APS-3), a heavy brigade of equipment with all combat support and combat service support afloat in ships. The next few weeks revealed simple questions that quickly became million-dollar queries as we began the process of educating ourselves on what we did not know about APS-3.

What type of mortars are loaded on the ships—4.2-inch or 120mm? Do the vehicles come with complete basic issue equipment? Are any major end items missing or unserviceable? What is the status of sets, kits and outfits (SKO)? Is the communications equipment Vehicular Intercom-1 (VIC-1) or VIC-3, and are the necessary installation kits and diagnostic equipment available? With pressure from airlift planners to specify how many pallets of equipment to accompany troops (TAT) were required, it was difficult to determine what we should take besides individual equipment. Not surprisingly, we erred on the safe side and palletized practically everything imaginable, only to increase our airlift requirements.

For commanders who are well into executing a deployment, such logistical issues are problematic and must be resolved prior to their forces' arrival in theater. While our cries for information were met with

noble attempts by various agencies to find answers during the unanticipated delay in deployment, two things became quite evident: there was no existing system to provide such information, and even more important, there was no excuse for such uncertainty.

This article critically examines the Army's Pre-positioned Afloat program (APA) from the user's perspective and provides recommendations for ensuring that warfighting commanders and APS

The Army's pre-positioned fleet minimizes initial strategic sealift requirements and facilitates the early deployment of Army heavy brigade forces, delivers theater-opening CS and CSS forces and port-opening equipment, and provides sustainment stocks for an AO. Ideally, the equipment will be fully operational with deployed troops within 15 days of notification.

planners have the necessary detail to plan and execute the commander in chief's (CINC's) military strategy. However, understanding the current status of APS-3 requires a brief look at the genesis of this key link in our nation's strategic mobility triad (SMT)—airlift, sealift and pre-positioned equipment—and an explanation of why it is so important to our National Security Strategy (NSS).

APS-3 was born out of necessity as the end of the Cold War and the corresponding reductions in Europe forced the Army to transition from a threat-based to a capability-based strategy. This shift required military planners to rely increasingly on units based in the Continental United States, with greater response times, to meet emerging asymmetrical threats. However, the difficulties executing the operational requirements of such a strategy became

apparent during Operation *Desert Shield*, when military planners experienced significant deficiencies in our ability to project heavy forces into a theater.

During the pre-Gulf War period, the first APA fleet consisted of four ships used primarily for transporting ammunition and port handling equipment. The Marines, on the other hand, had developed a maritime pre-positioning force (MPF) as early as

While the APA Mobile Training Team program detailed in FM 100-17-1, Army Pre-positioned Afloat Operations, is sound, it is only as good as the timeliness of the training itself. Conducting it during an N-hour sequence is too late. It must be planned well in advance on a unit's long-range training calendar.

1979, consisting of 13 ships organized into three maritime pre-positioned squadrons (MPSRONS). Their concept was validated during *Desert Shield* when the MPF provided the first heavy armor capability in theater.¹

Noting this success, the Office of the Joint Chiefs of Staff (JCS) began reassessing US mobility forces. Their 1992 Mobility Requirements Study (MRS) revealed that neither our current nor our estimated future ability to project strategic power met the demands of the NSS. Consequently, the study proposed new airlift and sealift forces while recommending that the Army pre-position sets of heavy equipment aboard ships staged close to potential trouble spots.

To address the MRS with the Army Strategic Mobility Program (ASMP), which published its action plan in March 1993. It prompted the Army to develop the capability to provide a corps-size force of 5.5 divisions at C+75.² The doctrine this plan initiated highlights the importance of APS-3 in this force projection-crisis response strategy:

- “A light or airborne brigade-size force to be inserted into theater by C+4, with the remainder of the division to close not later than C+12. The force, including its personnel, equipment and logistical support structure, [will] be transported by air.

- An afloat heavy combat brigade with support to close into the theater, and be ready to right not later than C+15. The APA brigade force [will] be a 2X2 heavy brigade: two armored, two mechanized battalions plus support. APA also provides theater-opening combat support (CS) and combat service support (CSS) units and sustainment stocks

for 30 days of contingency. This force [will] be organized into force modules tailored to meet the CINCs needs.

- By C+30, two heavy divisions—a mix of mechanized infantry, armored or air assault forces, depending on the theater commander's priorities, including the logistical support structure—[will] close in theater. The equipment for the heavy force [will] transit by sealift.

- The remaining force—two divisions and support—[will] close by C+75.³

Based on the Marine's MPF concept, the Army's pre-positioned fleet is designed for rapid deployment and employment of an Army heavy brigade into secured ports in an area of operations (AO).⁴ This capability provides a combatant commander with the flexibility to reinforce and enhance an established lodgment, while providing initial sustainment of deploying contingency forces.⁵ Essentially, the APA minimizes initial strategic sealift requirements and facilitates the early deployment of Army heavy brigade forces, delivers theater-opening CS and CSS forces and port-opening equipment, and provides sustainment stocks for an AO. Ideally, the equipment will be operational within eight days of initial discharge and fully operational with deployed troops within 15 days of notification.

APS-3 Composition. Currently, the heavy brigade afloat consists of two tank and two mechanized infantry battalions, one self-propelled artillery and one combat engineer battalion, a battery of air defense artillery, all required CSS, and 15 days of supply loaded on a fleet of 14 ships—a combined total of 870,000 square feet of cargo.⁶ Under ideal conditions, ships can be underway from their loiter locations to predesignated port facilities in Southwest Asia or Northeast Asia within four hours of notification. By 2003, APS-3 will include enough equipment for two heavy brigades and a corps/theater base. This will be loaded onto eight new Large Medium-Speed Roll On-Roll Off (LMSR) ships that, along with two container ships, two ammunition ships and one crane ship, will resource the APA program and provide the Army with two million square feet of materiel to support power projection. Additionally, 11 refurbished LMSRs will provide surge sealift for follow-on divisions and sustainment, and complete the sealift requirements of the SMT out to 2010.⁷

The APA program has been a godsend for military strategists struggling to plan for operations in two nearly simultaneous major theaters of war (MTW).⁸ It accomplishes in days what took months



Pre-positioned vehicles at APS-5, Camp Doha, Kuwait.

When Army units are designated to participate in INTRINSIC ACTION, they start a six-month journey of coordination liaison meetings with Army Central Command-Kuwait (ARCENT-K) and the contractor, ITT. Unit logisticians, executive and operations officers and even commanders make three trips to APS-5 Kuwait to meet with representatives from every organization involved in their deployment.

during *Desert Storm*—with more than four times the efficiency—and is unmatched by any other military force in the world. Although APS-3 deters potential adversaries and equips US warriors, customers must better understand how this system works. Likewise, APS-3 planners need to hear directly from warfighters.

Improving APS-3. The Deputy Chief of Staff for Logistics (DC-SLOG) and Army Materiel Command (AMC), among others, have made Herculean efforts to plan and execute this program. In a few short years the program has evolved dramatically in both size and capability. However, the system suffers from a shortfall that can be met only through close coordination between APS planners and warfighters. To work reliably, APS-3 must address two challenges—inventory visibility and hands-on unit training by forces designated to draw the equipment.

Major commands (MACOMs) tasked to perform contingency missions know well in advance (often 12 to 18 months) when readiness cycles will affect their units. At the direction of the supported CINC, the corps commander will identify contingency force pool units—units assigned to execute or support the APA mission.⁹ To manage these cycles, Force Package One (FP1) and FP2 units are designated. One of the force packages will be airlifted to pre-positioned equipment, while the follow-on force package will be airlifted to join APS-3 at a port.

Why then do we typically wait until an alert to determine the status of APS-3? For example, all of the questions raised in this article's opening vignette could have been addressed months earlier.

When Army units are designated to participate in *INTRINSIC ACTION*, they start a six-month journey of coordination liaison meetings with Army Central Command-Kuwait (ARCENT-K) and the contractor, ITT.¹⁰ Unit logisticians, executive and operations officers and even commanders make three trips to APS-5 Kuwait to meet with representatives from every organization involved in their deployment. Unit commanders and staffs study every phase of reception, staging, onward-movement and integration (RSOI).

A fourth coordination meeting is conducted when ARCENT-K and its representatives visit the unit at its home station to discuss final details and draw-yard procedures. When the unit finally deploys there are no surprises. The equipment draw and movement to tactical assembly areas occur within hours after arrival in country. Units participating in *INTRINSIC ACTION* observe the same template used by units deploying to the NTC and thus experience how they will deploy in an APS-5 or TAT-only scenario.

Months prior to their departure, units deploying to Kuwait or the NTC have access reams of information about equipment they will draw. However,

imagine for a moment conducting the same operation from a cold start, with no coordination or detailed knowledge about the equipment prior to a notification-hour (N-hour) sequence.¹¹ Add the fact that drawing APS-3 stocks is not a routine operation, but an entry in a relatively uncharted AO. In

Planners must identify opportunities when a download of the equipment as part of a sea emergency readiness exercise includes both RSOI and maneuver training. Training and readiness options could include a rotation of the APA fleet with other existing pre-positioned fleets such as the one at Doha, Kuwait or the NTC. Both of these fleets are approaching overuse and should stand down for maintenance.

fact, APS-3 has been exercised only once, in October 1994, when the 3d Brigade Combat Team of the 24th Infantry Division (Mechanized) (now the 3d Infantry Division [Mechanized]) deployed to Southwest Asia as part of Operation *Vigilant Warrior*.¹² Smaller-scale exercises of APS-3 have been conducted since *Vigilant Warrior*, but none of these involved the entire set of equipment.¹³

Challenges with Inventory Management. APS-3 is managed by the Army War Reserve Support Command in Rock Island, Illinois, and is maintained by Combat Equipment Group-Asia (CEG-A), located in Charleston, South Carolina. CEG-A is responsible for the maintaining all major end items assigned to the APS-3 inventory, to include SKOs. CEG-A monitors these systems with inventory software called Army War Reserve Deployment System (AWRDS).

While AWRDS assists CEG-A's inventory control of major end items, it has several shortcomings that can critically affect deployment. First, AWRDS loses sight of equipment while it is downloaded off the ship during the 90-day maintenance cycles, which occur once every 30 months. This lack of visibility causes problems for APS-3 managers who, in response to lessons learned from *Vigilant Warrior*, monitor unit set integrity as an important detail for warfighters. But, problems arise when a combat system is delayed in long-term maintenance, and is not available for reload with the set. This is important information for managers who must then draw on other inventories, such as inactive warstocks, to compensate for the unanticipated shortages within the set.

Furthermore, AWRDS does not know when unit

sets are spread over several ships because it monitors only like-unit sets. When a task-organized unit is stowed on several ships, it becomes very difficult for the commander to identify his equipment. In effect, he does not know what is where. This is especially true for CS and CSS units because the various support elements are task-organized with units.¹⁴ Depending on the nature of support, it is not uncommon to find a CSS unit's equipment spread across six ships. However, AWRDS only provides asset visibility on a given ship and does not indicate which other ships may be carrying like-unit equipment. This can be determined only through surveying the inventory of other ships to account for the entire unit. The inventory management system has another shortcoming: while it accounts for SKOs, it does not provide detailed asset resolution for items within these SKOs.

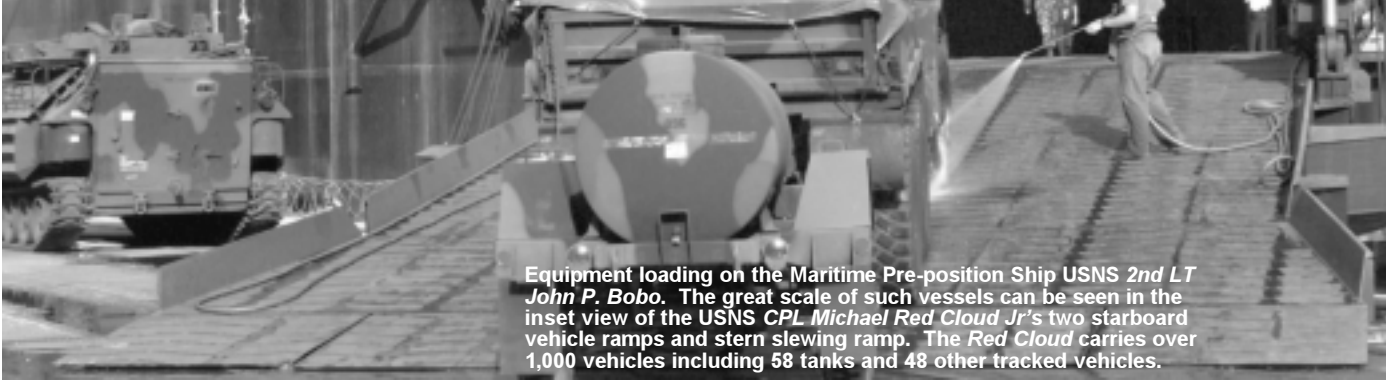
One valuable tool available to commanders facing these challenges is the Automated Battlebook System (ABS). Stored on a compact disc, this planning tool provides the warfighter windows-based software to help identify APS-3 inventory stocks. Although the ABS data is only as good as the information loaded from AWRDS, it does provide important information on the status of the major end items on a given ship.

Unit Training and Prior Coordination. Prior coordination between warfighting units and APS-managers can identify actual inventory shortcomings, to include authorized stockage levels and prescribed load lists, thus allowing planners to adjust TAT requirements.

Coordination also helps continuously modernize equipment in APS-3. For example, the US Navy Ship *Watson* is loaded with M106A6 Paladin 155mm self-propelled howitzers, M2A2 *Desert Storm* Bradley Infantry Fighting Vehicles and Bradley Stinger Fighting Vehicles.¹⁵ Nonetheless, a latency factor will persist because APS-3 cannot feasibly match the pace of changes to unit tables of organizational equipment. Since APS-3 stocks are updated only once during the maintenance cycle, differences will likely exist between home station and pre-positioned equipment. However, when commanders can be certain of the actual type of equipment they will draw, they can adjust their forecasts to provide appropriate training and preparation.

Other programs are also available to assist commanders in planning and preparing for an APS-3 deployment, such as the APA Mobile Training Team (MTT). This team visits units identified at the beginning of their APA training cycle, 90 days out, and trains them as the curriculum below details:

- In-brief the entire chain of command, to include the support structure (corps, division, instal-



Military Sealift Command

Equipment loading on the Maritime Pre-position Ship USNS 2nd LT John P. Bobo. The great scale of such vessels can be seen in the inset view of the USNS CPL Michael Red Cloud Jr's two starboard vehicle ramps and stern slewing ramp. The Red Cloud carries over 1,000 vehicles including 58 tanks and 48 other tracked vehicles.

The Army War Reserve Deployment System (AWRDS) does not know when unit sets are spread over several ships because it monitors only like-unit sets. When a task-organized unit is stowed on several ships, it becomes very difficult for the commander to identify his equipment. In effect, he does not know what is where. This is especially true for CS and CSS units because the various support elements are task-organized with units.

lation, brigade, and CSS commanders and staffs), to give all participants an overview of the program, establish relationships and assign responsibilities.

- Provide updated APA ship battle book data, to include complete equipment lists, current maintenance status of equipment and supplies aboard APA ships, review of load plans and identification of any force modernization issues.

- Establish an initial equipment transfer plan.

- Conduct an intensive training session on Off-load Pre-positioned Party (OPP) requirements and procedures for discharge and accountability transfer.

- Inform the brigade of source intelligence equipment required for linkages within theater if it is not already available.

- Perform liaison visits to appropriate commands.¹⁶

Unfortunately, because of budget cuts, MTT visits have been curtailed and are no longer funded by Headquarters, Department of the Army. This misfortune is due in part to the initial assumption that MTT would be a one-time event per division. But, this assumption failed to account for personnel turbulence and a lack of institutional training to sustain the skills taught by the MTT.¹⁷

Currently, the MTT funding burden falls on US Army Forces Command, which continues to struggle to resource the program. Training through distance learning and education using video telecon-

ferences has yet to prove its utility to either party.¹⁸ The muddling has prompted discussion about whether such training is even necessary. Consequently, APA MTT has been tied up in a who-is-responsible, who-will-task and who-will-pay bureaucratic cycle.¹⁹

Recommendations. A great effort is already underway to address some of the problems identified in this article. For example, APS-3 managers recognize problems with the inventory system and are looking at ways to correct them.²⁰

While the APA MTT program detailed in FM 100-17-1, *Army Pre-positioned Afloat Operations*, is sound, it is only as good as the timeliness of the training itself. Conducting it during an N-hour sequence is too late. It must be planned well in advance on a unit's long-range training calendar. Ideally, APS-3 training and its integration in RSOI should be a highlighted event during a division semi annual training brief. Further, such contingency planning should be added as a supporting battle task as part of the division's mission essential task list.

FM 100-17-1 details what a commander needs to consider when planning APA operations. Incredibly, a surprising number of warfighters and logisticians have never seen or heard of the FM 100-17 series of manuals, in part because APS-3 is not being taught as a system of power projection in Training

and Doctrine Command schools. Junior leaders are arriving at units unaware of APS its critical role in meeting the nation's strategic mobility requirements.

The POMCUS (pre-position of materiel configurations to unit sets) Inspection Reconnaissance Program (PIRP), was a required activity prior to any *REFORGER* exercise.²¹ The APS-3 system can only get better with similar inspections and more involvement from warfighters.

Other opportunities also need to be explored to maintain the readiness of the APS-3 program. For example, the need to exercise the equipment cannot be over emphasized. Planners must identify opportunities when a download of the equipment as part of a sea emergency readiness exercise includes both RSOI and maneuver training. Other training and readiness options could include a rotation of the APA fleet with other existing pre-positioned fleets such as the one at Doha, Kuwait, or the NTC. Both of these fleets are approaching overuse and should

stand down for maintenance.²²

Currently, the warfighting community has lost its vote. As the primary customers, commanders must have a voice in the management of the equipment their soldiers will use in combat. Although US Army Forces Central Command can provide APA managers with valuable data about the AO and force integration requirements focused at the operational level, tactical equipment issues are better fielded at the division level, where the fidelity required for warfighting commanders to plan for a "come as you are" conflict is most assured.

APS-3 can only get better as warfighters train with it and learn how to assess its status in real time and minute detail. Coordination between the supplier and user must begin at the CINC level to allocate resources and assure this valuable program's success. We know what right looks like. Now we must make APS-3 work right for the soldiers who ultimately depend on it. **MR**

NOTES

1. The White House, *A National Security Strategy for a New Century*, (Washington D.C.: The White House, May 1997), 1.

2. The date at which a unit begins deployment is referred to as "C" day.

3. US Army Field Manual (FM) 100-17-1, *Army Pre-positioned Afloat Operations* (Washington, DC: Headquarters, Department of the Army, 27 July 1996), iv.

4. Army Pre-Positioned Stocks (APS) Afloat (APS-3) rapidly provides a heavy brigade of two tank and two mechanized battalions (2X2) with a support slice and sustainment supplies to a combatant CINC anywhere in the world. However, it belongs to no CINC but is a swing stock maintained combat-ready by Army Materiel Command (AMC). Additionally, it provides a force support package, watercraft and other equipment to provide early port opening in an area where insufficient port facilities exist. APS-3 also can provide early entry equipment into an area when used in military operations other than war (MOOTW) through selected discharge of embarked equipment and supplies. Dr. Derek Povah, Plans and Operations Branch, Power Projection Logistics Division, Deputy Chief of Staff for Logistics at Army Forces Command, Derek Povah <povahderek@forscom.army.mil> "APS-3" electronic mail message to <tuckerm@awc.carlisle.army.mil>, 12 December 1998.

5. FM 100-17-1.

6. Kim A. Richards, "Prepo Afloat: Key to Power Projection" *Army Logician*, January-February 1998, 24-26.

7. 3.5 billion has been budgeted for FY 00-05, with an annual requirement of 575 million per year. Interview with Mr. J. Kern, Army War Reserve Division, Deputy Chief of Staff for Logistics (DCSLOG), the Pentagon on 5 November 1998.

8. "Our military must be able to transition to fighting major theater wars from a posture of global engagement—from substantial levels of peacetime engagement overseas as well as multiple concurrent smaller-scale contingencies." The White House, *A National Security For A New Century*, 22.

9. FM 100-17-1, 2-3.

10. ITT is a civilian contractor who maintains APS-5 at Camp Doha, Kuwait. ITT at one time stood for International Telephone and Telegraph. The company has since diversified into many other contracts and dropped the title International Telephone and Telegraph but kept ITT as their logo.

11. The term "N-Hour" sequence refers to the time at which a unit is officially notified of a deployment.

12. Lawrence J. Wark, "Army War Reserve-3: Pre-positioned Equipment Afloat," *Infantry*, March-April 1996, 7. Third Army has planned an exercise *NATIVE ATLAS* in the spring of 2000, in which one battalion set of equipment from APS-3 is scheduled to be downloaded and exercised.

13. A company of equipment was unloaded from the Cape Horn in the United Arab Emirates (UAE) during CENTCOM Exercise *IRON FALCON* in March-April 1996. In 1997 the *American Cormorant* was off-loaded as part of Exercise *BIG RED*, and the *Gopher State* participated in a 1998 exercise. These latter two ships contain port opening equipment and do not involve linking up with large troop units. John Kern <H.kernjh@HQDA.army.mil> "APS-3 Exercises" electronic mail to LTC Michael S. Tucker <tuckerm@awc.carlisle.army.mil>, 16 December 1998.

14. These elements are commonly called "habitual slice elements" which come in the form of a fire support element, maintenance support team, combat engi-

neers and an air defense platoon. All of these elements belong to parent battalions within the division structure.

15. The *Watson* will carry the most modern of all equipment currently afloat, including 48 each M1000s/M1070s in support of two heavy equipment transport platoons. Extracted from Briefing by United States Army Logistics Evaluation Agency, at Defense Distribution Region East, 5 November 1998.

16. FM 100-17-1, A1.

17. Leadership at DCSLOG made the funding cut decision based on the training being a continuous FORSCOM mission requirement. However, according to Mr. John Kern, Deputy, War Reserve Division, Office of the Deputy Chief of Staff for Logistics, FORSCOM AO's have been told to submit funding for MTT in the next program objective memorandum. Currently a cost model for a MTT visit to a unit is \$10K. During the recent MTT to 3ID(M), FORSCOM used contingency funds to finance the visit. Anthony Kral <H.krala@emh5.stewart.army.mil> "APS-3" electronic mail to <tuckerm@awc.carlisle.army.mil>, 30 November 1998.

18. The first distance learning workshops took place 21-23 September 1998 at Fort Hood, Texas over the Tele-Net. Results were disappointing. Distance learning does not support the initial hands-on portion of instruction. Technical difficulties caused considerable loss of instruction time. Student turnout was low. All too often such training, if not placed on the unit's long range calendar, will not receive proper resourcing and emphasis, especially if the training has not been endorsed by senior leaders. Derek Povah <povahderek@forscom.army.mil> and "APS-3" electronic mail message to <tuckerm@awc.carlisle.army.mil>, 16 December 1998.

19. Derek Povah, "APS-3 First Distance Learning Via Tele-Net from Fort Eustis, Virginia, to Fort Hood, Texas, 21-24 September 98-AFTER ACTION REPORT", electronic mail message to Joseph Nesbitt <NesbiJG@hqda.army.mil> on 1 October 1998; Derek Povah <povahderek@forscom.army.mil>, "ABS Training for 3ID during Nov 98"; electronic mail message to CPT Gerard J. Overbey on 5 October 1998.

20. Per phone interview with Scott Wessinger of Stanley Corporation on 16 December 1998, a 3.0 ABS beta version has been developed to correct most of the database software problems identified in this paper. This beta version was demonstrated during a recent MTT visit to 3d Infantry Division (Mech) in November 1998.

21. The PIRP "pie-rep" was conducted by advance party months prior to any *REFORGER* exercise. The intent was for units to pre-inspect equipment which they would draw in the months ahead and receive briefings on their unit's equipment issue.

22. USCENTCOM's *INTRINSIC ACTION* was a 60-day exercise conducted two to three times a year to allow for maintenance downtime. Since April 1996, unit participation in *INTRINSIC ACTION* has been continuous, with units rotating every four months, and leaving little to no maintenance downtime. APS-5 is now approaching the same maintenance challenges the NTC has experienced with its "Blue and Gold" fleet; one fleet has to be used to replace the non-mission capable (NMC) vehicles in the fleet being issued. Over time this practice causes two fleets to be maintained to meet the recurring demands of having one fleet always deployed (issued to units).

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Transnational Contagion and Global Security

Colonel Patrick W. Kelley, US Army

SINCE THE END of the Cold War, the United States is increasingly accepting its role in global security as one of securing peace and prosperity through efforts directed toward states that are failing or at risk of failing.¹ Even if these states do not pose a direct military threat, their failure clearly has a ripple effect well beyond their borders. Recent history and current events point to national tragedies in places such as Somalia, Rwanda, Haiti, Bosnia and some of the newly independent states of the former Soviet Union. In many of these places the universal human value of widespread good health is lacking, with obvious effects on productivity and contentment. Contrary to traditional Malthusian thinking, poor health is also associated with uncontrolled population growth.² Such growth typically leads to migration and the creation of the dense urban slums now found in so much of the developing world. These circumstances in turn lead to the conditions that foster the emergence of new infectious diseases, some of which, due to their epidemiologic characteristics, threaten the very fabric of nations and even humanity.

President William J. Clinton's national security strategy of engagement and enlargement and former Secretary of Defense William J. Perry's doctrine of preventive defense take a broadly defined, proactive approach to securing global stability.³ The concept that some infectious diseases are national as distinct from international is outdated. In an era in which business and recreational travel, environmental change and population migrations occur on a global scale, it is unrealistic to think that national borders can secure the United States from infectious disease threats or their consequences. The international importance of emerging infections has been reflected in discussions among the world's most senior leaders, including those of the G7, the US-European Union New Transatlantic Agenda, the Gore-Chernomyrdin Commission and the Gore-Mbeki Commission. During the 1997 Denver summit

The fact that our troops tend to grow up under good hygienic conditions further means that upon reaching adulthood they tend to be "immunologic virgins" compared with members of many potential opposing forces. . . . The military effect of differential immunity was well illustrated in the colonization of the New World where indigenous populations were highly susceptible to deadly manifestations of what were, for the Europeans, commonly occurring illnesses.

the United States presented a major infectious disease initiative that included a commitment from the heads of state to develop a global surveillance system.

The Problem

Throughout human history, infectious disease epidemics and pandemics have affected not only the health of individuals but also the success of military operations and even the stability of societies. Despite tremendous public health progress during the 20th century, numerous infectious conditions have grown harder to control, and some new infectious diseases have emerged. To public health leaders, the optimism or indifference displayed toward infectious diseases poses a threat to society.

Because of readiness demands and the particular environments in which military personnel train and deploy, this concern is especially important to the services. The fact that recruits from throughout the country mix closely in basic training camps and later travel and mingle extensively with persons throughout the world favors the appearance and rapid spread of emerging infections in the military. The fact that our troops tend to grow up under good hygienic conditions further means that upon reaching adulthood they tend to be "immunologic virgins" compared

with members of many potential opposing forces who spent their childhood in hygienic squalor. As a result, some infections, to which our opponents may have almost universally become immune dur-

Some recent operationally significant infection problems affecting our troops have included an outbreak of primaquine-tolerant vivax malaria after operations in Somalia, dengue fever during and after operations in Somalia and Haiti and the resurgence of malaria along the DMZ in Korea. Outbreaks of drug-resistant Campylobacter diarrhea have also affected troops deployed on recent exercises in Thailand and Greece.

ing childhood, can pose a significant health threat to a deployed US force. The military effect of differential immunity was well illustrated in the colonization of the New World: small numbers of European explorers had a relatively easy time conquering native forces because indigenous populations were highly susceptible to deadly manifestations of what were, for the Europeans, commonly occurring illnesses such as measles and smallpox.⁴

The term “emerging infectious diseases” is usually applied to those conditions in which the incidence in humans has increased within the past two decades or threatens to increase in the near future.⁵ The concept of emerging infectious diseases, however, can equally apply to animals or plants. Certainly the impact of the fungus *Phytophthora infestans* on the Irish potato crops in the late 1840s left a lasting impact on not only that island but also the rest of the world. More recently, the 1997-98 El Nino-associated outbreak of Rift Valley Fever in East Africa killed tens of thousands of domesticated animals, a huge threat to stability in a region where the health of these animals is key to human survival.

The reemergence of plague in India in 1994, though probably less significant than originally thought, still prompted the frantic migration of over 300,000 frightened refugees, some of whom allegedly carried the bacteria. The fear prompted the closing of borders, the cessation of trade and a significant tumble on the Bombay stock exchange. Ultimately, even a military quarantine was put into place and the possibility of bioterrorism emanating from another country was officially investigated.⁶

Even unsubstantiated rumors of emerging infections can do great damage to the fragile economies of some countries as was evident when in 1996 the Dominican Republic lost millions of dollars in can-

celed tourist travel after the erroneous report of Ebola hemorrhagic fever on the island.

Emerging infectious diseases have taken a major toll on the US military during both training and operational deployment. Some recent operationally significant emerging infection problems affecting our troops have included an outbreak of primaquine-tolerant vivax malaria after operations in Somalia, dengue fever during and after operations in Somalia and Haiti and the resurgence of malaria along the demilitarized zone (DMZ) in Korea.⁷ Outbreaks of drug-resistant *Campylobacter* diarrhea have also affected troops deployed on recent exercises in Thailand and Greece. In the 1980s and 1990s two previously unknown tick-borne diseases, human ehrlichiosis and South African tick typhus, emerged in outbreak dimensions among deployed US troops.

The most worrisome known potential emerging infectious disease threat is that of pandemic influenza. A highly transmissible variant of the H5N1 avian influenza that occurred in 1997 in Hong Kong and killed 33 percent of those infected would be catastrophic to national and international security.⁸ The Wuhan strain of influenza A, which recently emerged and circulated around the world, was first recognized outside of China in a US Air Force health care beneficiary. This emerging strain was considered so important a threat that the World Health Organization recommended its inclusion in influenza vaccines used worldwide during the past two years. Unfortunately, in February 1996, before a vaccine could be made incorporating the Wuhan strain, an outbreak occurred on the USS *Arkansas*, affecting 217 of the 526 crewmembers over a three-week period. This sickness from a relatively benign strain of influenza forced the ship into port for two days.

The threat of emerging strains of influenza to military populations is not new. The US military was affected early during the infamous 1918-1919 influenza pandemic that killed more than 20 million people worldwide including more than 43,000 US military personnel.⁹ During mid-October 1918, the US Army and Navy experienced over 6,000 influenza-related deaths per week, largely in recruit camps. In spite of the ongoing World War, this outbreak necessitated suspension of about 143,000 inductions into the service. The effect on the Germans was also significant: the thousands of cases in German divisions during the summer of 1918 greatly weakened the German's capability to mount a successful offensive against the Allies. Some historians credit this epidemic and its impact on the German forces with contributing significantly to the end of World War I.¹⁰ The memory of this catastrophic pandemic helped mobilize the United States in 1976

after a recruit died from swine influenza at Fort Dix, New Jersey.

Factors in Emergence

Disease emergence depends on many factors.¹¹ Genetic changes may be responsible for the emergence of new infectious diseases from existing organisms, such as influenza. Known diseases may spread to new geographic areas and populations, as has been observed with raccoon rabies in the northeastern United States. Previously unknown infections may occur when humans enter certain environments that increase exposure to insect vectors or environmental sources of new agents. Activity in once-remote tropical rainforests is an example of how humans might come into contact with previously unknown infectious agents. Breakdowns in public health measures for previously controlled infections have also contributed to the spread of more well-known illnesses such as cholera and whooping cough.

Societal disruption (such as, urban decay, refugee migration and economic impoverishment) may lead to the emergence or re-emergence of infectious diseases. The huge problem of diarrhea due to cholera and shigellosis in Zaire among Rwandan refugees is a graphic example. Social disruption in North Korea may explain the reemergence of malaria after a 20-year absence on the Korean peninsula immediately south of the DMZ. The current malaria emergence began in 1993 with only two reported cases but quickly grew to 39 cases in 1994, 118 in 1995, 367 in 1996 and 1642 in 1997. The US military reported 27 cases in 1997, but owing to the long incubation period of this malaria species, cases turned up in troops who redeployed to the Continental United States. Some of these ill individuals presented only after leaving the military. Though local spread from these soldiers into US populations has not been documented, in recent years local transmission from malaria-infected migrants has led to indigenous malaria

US Coast Guard



Haitians wait for transportation back to their villiges after repatriation from the United States.

Disease clearly contributes to the destabilization of states. The United States and partner nations are often called to intervene and bring order to some of these states in collapse. For example, refugees from Haiti, many of whom have been infected with HIV and tuberculosis, have posed a US security concern. The US deployment to Zaire and Rwanda was greatly motivated by the rampant illness among refugees. Emerging infections over the past decade in Somalia, Sierra Leone, Liberia, Burundi and Cambodia have also affected internal stability.

cases in Michigan, Virginia and California.

Advances in health care also contribute to the development of emerging infections. In addition to the effects of drugs causing immunosuppression, the widespread and unrestricted availability of antibiotics in much of the world is an important cause of drug-resistant infections. The concern is not only the acquisition by US forces of antibiotic-resistant organisms while receiving health care during operations overseas but also the importation of these infections to US health care facilities. As a result of antibiotic misuse and insufficient progress in antibiotic development, some forms of tuberculosis, malaria and other organisms that occur overseas are now almost impossible to treat. This problem is increasing.

As even a casual visit to a US supermarket will indicate, Americans consume food that is grown, processed or packaged throughout the world. Processing and packaging associated with a global food

supply have increased the occurrence and spread of emerging infections, such as the recent US cyclosporal diarrhea caused by raspberries imported from Central America. Even more ominous have been the tremendous anxiety, international tension and agricultural embargo associated with the emergence of new variant Creutzfeldt-Jakob disease (Mad Cow Disease) in consumers of British beef.

Over the last several decades Americans have greatly increased their international travel and

Some medical historians believe that the 1918 strain of pandemic influenza was first recognized at Fort Riley, Kansas, and was initially carried on its way around the world by deploying US servicemen. More recently . . . some countries barred US personnel unless it was certified that they had tested negative for HIV. After the Gulf War, US forces were forbidden to donate blood because some had apparently become infected with a previously unrecognized form of leishmaniasis.

changed their sexual behavior patterns. These and other changes in human behavior (including the increased use of child-care facilities and certain recreational pursuits) increase the risk of acquiring emerging infections. American service personnel reflect these behavioral factors and have undoubtedly come back to our shores with foreign-acquired, drug-resistant sexually transmitted diseases.

Global warming, deforestation, floods, drought, famine and other ecological factors also affect the emergence of infectious diseases. Decay in public health infrastructure is another contributor. Communicable disease surveillance systems are inadequate in this country and almost nonexistent in some parts of the world. Better surveillance might have allowed the Human Immunodeficiency Virus (HIV) to be recognized earlier. Of course microbes themselves have an uncanny ability to adapt to changing circumstances. Thus, even without the other factors, humanity will likely never be spared the need to respond to the challenge of emerging infections.

Current and Future Trends

The threat of naturally occurring emerging infections is likely to continue well into the future. Most of the factors in disease emergence described above will take years to mitigate even if countries get organized and motivated. Certainly, some factors such as population growth, migration into minimally inhabited regions and international trade in food-

stuffs will likely continue even in the face of proactive governments. The ability of microbes to adapt will never cease.

Just over the last 25 years at least 25 significant new infectious diseases have been recognized including HIV, multiple-drug-resistant tuberculosis, E. coli O157:H7 diarrhea, Nipah virus; cyclosporiasis; H5:N1 influenza, variant Creutzfeldt-Jakob disease, vancomycin-resistant staph, ebola hemorrhagic fever and hantavirus pulmonary syndrome in the Four Corners area of the US Southwest.¹² Many of these diseases defy treatment or a sure means of prevention. Particularly worrisome is the fact that some organisms are now showing resistance to all known antibiotics. The pharmaceutical industry is not able to keep pace with this trend by developing enough new drugs. Some of these untreatable agents are largely confined (at least for the moment) to isolated parts of the world (for instance, multiple-drug-resistant malaria along the Thai-Burmese border). Others though, such as multiple-drug-resistant tuberculosis, are now found in metropolitan areas of the United States. A new, highly transmissible form of tuberculosis has also recently emerged.

As noted previously, pandemic influenza is unpredictable with respect to its timing but not its inevitability. Pandemics of varying intensity and morbidity have occurred this century in 1918, 1957, 1968 and 1977. Most experts feel it is only a matter of time before a highly pathogenic strain such as the 1997 Hong Kong avian influenza genetically mixes with a more typical, milder, but highly transmissible strain. This could produce a "superinfluenza" reminiscent of the 1918 influenza, which traveled around the world in just months, killing over 20 million people, most in the prime of life.¹³

In recent history HIV is probably the most widely publicized emerging infection.¹⁴ Despite 15 years of research into its epidemiology and control, transmission continues at a high rate in much of the world. The Harvard-based Global Acquired Immunodeficiency Syndrome (AIDS) Policy Coalition estimated in 1996 that 4.7 million new HIV infections occurred globally during 1995. The Policy Coalition further reported that "If the current epidemic trends persist through the end of the century, it is most likely that between 60 million and 70 million adults will have been infected with HIV by the end of the year 2000."¹⁵ About half of these will have been in Southeast Asia and 40 percent in sub-Saharan Africa. The HIV pandemic has had secondary effects on the spread of opportunistic infections such as tuberculosis.

In parts of Africa HIV infection among adults exceeds 25 percent. The loss of productivity, the devastation to family structures and the extent of

premature death have only begun to be appreciated because of the decade-long incubation period before HIV infection progresses to AIDS. In the communities affected, this disease is obviously associated with great psychological stress due not only to personal losses but also the impact of the infection on migration patterns, community leadership and institutions.

Impact on US Security

Traditionally, national security has been defined by most as focused on classical military threats. Our foreign policy interests clearly go beyond the ability to crush the enemy on the battlefield. In the late 20th century, the survival of states is clearly affected by forces well beyond the ability to wage war, as the former Soviet Union's fate illustrates. Just as economic growth and democratic stability throughout the world favor US security, economic collapse and governmental instability in other nations can produce a ripple effect or even a tidal wave against peace and prosperity in this country. In a global economy characterized by growing trade and travel, the United States cannot prosper as a healthy island in a sea of uncontrolled infectious diseases. As President Clinton noted, "New diseases, such as AIDS, and other epidemics which can be spread through environmental degradation, threaten to overwhelm the health facilities of developing countries, disrupt societies and stop economic growth. Developing countries must address these realities with national sustainable development programs that offer viable alternatives. US leadership is of the essence to facilitate that progress. If such alternatives are not developed, the consequences for the planet's future will be grave indeed."¹⁶

Both directly and through its associations with migration, environmental degradation, and other factors, disease clearly contributes to the destabilization of states. The United States and partner nations are often called to intervene and bring order to some of these states in collapse. For example, refugees from Haiti, many of whom have been infected with HIV and tuberculosis, have posed a US security concern. The US deployment to Zaire and Rwanda was greatly motivated by the rampant illness among refugees. Emerging infections over the past decade in Somalia, Sierra Leone, Liberia, Burundi and Cambodia have also affected internal stability.

Specific Impact on US Military Capabilities and Missions

Emerging infections have had a well-established impact in the last decade on US military personnel. The impacts have been not only direct assaults on health but also on policies and missions. As noted

previously, the impact of influenza on military readiness is legendary. A manufacturer's business decision caused the recent loss of adenovirus vaccines, which have been used with great success in US military recruits for 20 years. The absence of vaccines

Social disruption in North Korea may explain the reemergence of malaria after a 20-year absence south of the DMZ. The current malaria emergence began in 1993 with only two reported cases but quickly grew to 39 cases in 1994, 367 in 1996 and 1642 in 1997. . . . Owing to the long incubation period of this malaria species, cases turned up in troops who redeployed to the United States.

will likely lead to thousands of acute, seasonal cases of respiratory disease. Quite possibly such outbreaks will affect our ability to fulfill training quotas as they did at times in the pre-vaccine era.

Many other outbreaks have affected US forces in recent years and will likely continue to do so. Vivax malaria appears to be spreading through the Korean peninsula. Fortunately it is drug sensitive, but its occurrence has caused US troops in Korea to be placed on antimalarial drugs for the first time in over 20 years. The US mission to Somalia several years ago was marked by hundreds of cases of dengue and primaquine-tolerant vivax malaria. Under the right tactical circumstances, such illnesses could have a significant effect on military capabilities, especially when key individuals are incapacitated. Fortunately, effective personal protective measures are available, though they are usually underutilized. Even in the United States, some training areas are becoming more dangerous as a result of the increasing prevalence of arthropod-borne infections such as ehrlichiosis and Lyme disease.

Emerging infections may have significant impacts on how the US military is allowed to operate. Troops have long been considered vectors of emerging infections. In fact, some medical historians believe that the 1918 strain of pandemic influenza was first recognized at Fort Riley, Kansas, and was initially carried on its way around the world by deploying US servicemen. More recently, US servicemen were alleged to contribute to the international spread of HIV infection. Some countries barred US military personnel unless their commanders could certify that they had tested negative for HIV antibodies. After the Gulf War, US forces were forbidden to donate blood because some had apparently become infected with a previously unrecognized form of leishmaniasis. The potential for international

spread of emerging infections by military forces is illustrated by the increasing role of multinational forces on peacekeeping missions. For example, during the UN Haiti mission, four deployed Bengali soldiers incubating hepatitis E acquired at home became ill and potentially could have spread this newly recognized virus. Hepatitis E is a relatively rare agent in this hemisphere but one which is apparently rather common now on the Indian subcontinent.

Almost every major US military mission in recent years has been influenced by the presence of ill health in the local population. As our nation seeks to lead through engagement and enlargement it seems inevitable that deployments to unstable, disease-ridden places like Somalia, Haiti, Liberia and Rwanda will continue. Growing chaos in failing states, often fueled by rampant ill health, will likely lead to more US military interventions. In some of these interventions, US forces may be quite vulnerable. For example, effective antimicrobial prophylaxis and treatment of malaria near refugee camps along the Thai-Burmese border is now almost impossible.

Historians in the next millennium may find that the 20th century's greatest fallacy was the belief that infectious diseases were nearing elimination. The resultant complacency has actually increased the threat. Both naturally occurring and bioterrorist infectious agents hold an increasing potential to destabilize international security. Failure to recognize and accept this concept will lead to disaster. Viewing national security as merely an issue of relative

military capabilities is shortsighted. The underpinnings of most stable societies are increasingly dependent on their populations' health, which is in turn affected by environmental, economic and educational factors.

Globally, infectious diseases remain the leading cause of death. The ability of microbes to adapt and breach our traditional defenses, coupled with changes in society, technology and the environment, sustain the likelihood that epidemics reminiscent of the worst in history will recur. In addition, terrorists with some expertise in molecular biology and modest financing can now wage biological warfare on cities, regions and even the entire planet. This prospect suggests the ultimate emerging infection.

Emerging infections, naturally occurring or otherwise, pose well-documented challenges to force protection. Whether it be pandemic influenza, untreatable forms of malaria or the anxiety associated with potentially infectious, ill-defined postwar syndromes, a proactive, anticipatory strategy is essential. The problem of emerging infections is global, reaching beyond the resources of any military organization or any single nation. A responsible assessment indicates that national and global security requires a robust early warning system for emerging infections. Partnerships among military organizations, federal and state agencies, and national and international groups are integral to a proactive strategy because they leverage limited resources and provide access to information needed for force protection and national security.¹⁷ **MR**

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Combat Stress Control Detachment: A Commander's Tool

Major Michael E. Doyle, US Army

CONTROLLING COMBAT STRESS is the commander's responsibility and encompasses all the steps that the commander must take to keep an operations' strain on people within an acceptable range. Stress cannot be avoided, nor should it be, for the tension often generates productive energy. Commanders can seek to enhance those positive effects that create stress, such as esprit de corps, trust and heroism, while minimizing the negative effects, such as criminal acts, combat refusal and battle fatigue.

Battle fatigue—also referred to as combat stress fatigue, stress fatigue and combat reaction—is defined as any response to the stress of combat that requires treatment.¹ Signs and symptoms of battle fatigue may be present in many soldiers, but only when the soldier becomes combat ineffective is he considered to be a battle fatigue casualty and referred for treatment. Treatment, as the term fatigue would indicate, simply provides rest, reassurance, replenishment and restored confidence.²

This article will present the history of controlling combat stress and managing battle fatigue, describe the unique capabilities and role of the medical detachment, combat stress control (CSC), and through case examples, emphasize that combat stress control—trained, practiced and employed by the commander—is a combat multiplier.

Historical Background

Historians have long described man's response to the extraordinary stress of war. We are motivated by heroic responses to combat pressures and, at the other extreme, horrified by atrocities. Commanders manage violence in more ways than by applying ap-

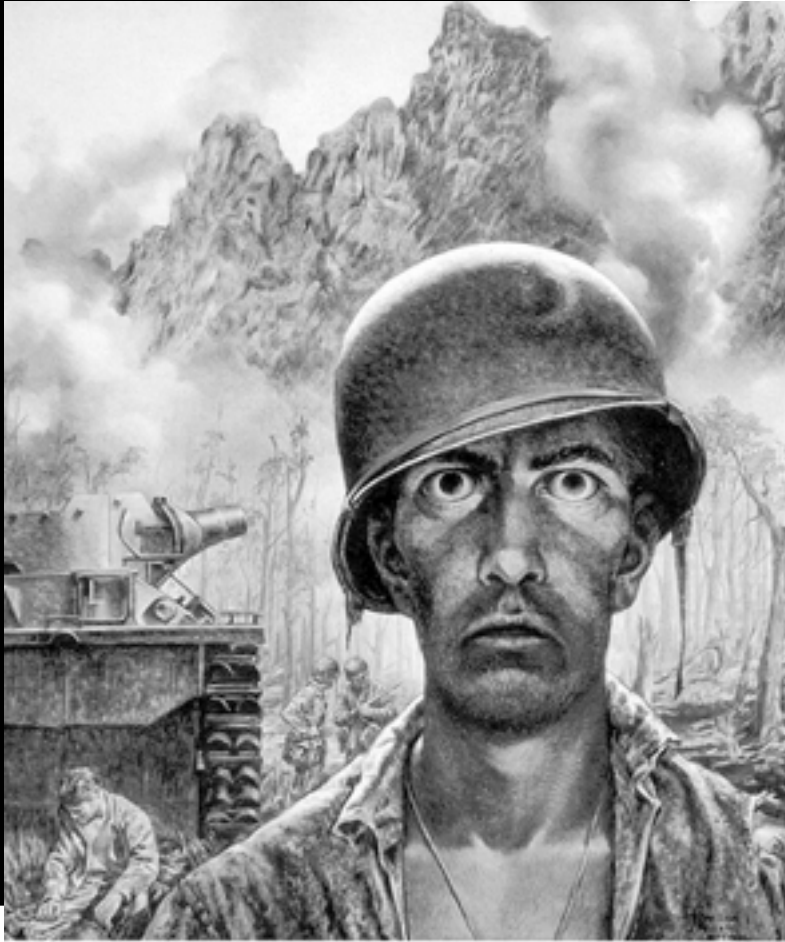
propriate force at the decisive point. They must also manage their soldiers' ability to function in the uncommonly stressful environment of war—recognizing

The 27-member 84th CSC had 10,860 soldier contacts during its 352-day TF Eagle deployment. Significant among these numbers are 921 command consultations and 135 soldiers held for restorative care. Of the soldiers who used the 84th CSC's restoration services, 85 percent returned to duty after staying with the CSC for an average of 6 days.

their fear but disciplining them not to run; preparing them to kill, but not indiscriminately.

The evolution of 20th-century warfare has increased awareness of this balancing act. US Army physicians war in the American Civil War reported mass casualties from the stress of waging war when "nostalgia," a homesickness among troops, reduced fighting forces.³ In World War I, "shell shock" as a condition and term was born in the trenches on the Western Front. At the time, treatment of shell shock or "war neurosis" consisted primarily of evacuation far from the front. However, this practice encouraged greater numbers of casualties. More important, these casualties did not improve with evacuation and were lost to combat.⁴ By 1917, one seventh of all medically discharged British soldiers were unfit due to mental conditions.⁵

Prior to deploying combat troops to Europe, the US Army sent a medical team to study British and French lessons learned. Both the British and the French by then had established principles of



psychiatric casualty management that called for simple, immediate treatment as close to the front as possible, and both armies expected that soldiers would return to duty. From this experience developed the PIES acronym for treatment—proximity, immediacy, expectancy and simplicity. Another development from this study was the division psychiatrist position for implementing forward treatment principles, to include the recognition of battle fatigue by unit leaders and medical personnel.⁶ Overall, a large percentage of World War I war neurosis cases were returned to duty.⁷

During the interwar years, rather than institutionalizing these World War I lessons about managing battlefatigue casualties, the Army looked to refine and apply early 20th-century theories of human behavior and development to screen out soldiers who would crack under the stress of battle. Relying on screening rather than training to prevent psychiatric casualties proved disastrous in early fighting in North Africa, when large numbers of battle fatigue casualties occurred among troops previously screened.⁸ Worse, because no provisions had been made for treatment, casualties were shipped to distant treatment facilities and lost from the theater.

In September 1943, the Army screened out more soldiers than it accepted, prompting a rapid rediscovery of World War I-style forward treatment principles. The effect was profound: returned to duty (RTD) rates increased from zero to 70 percent, and the concept of PIES was reestablished.⁹

Other developments soon followed. "Combat exhaustion" replaced war neurosis as the term describing battle fatigue. The division psychiatrist trained battalion surgeons to manage battle fatigue casualties and set up rest centers in the battalion trains. The regimental surgeon ran exhaustion centers, while the division psychiatrist established and oversaw training and rehabilitation centers. These centers firmly demarcated soldiers suffering combat exhaustion from those who were patients—whether surgical, medical or neuropsychiatric—de-emphasizing the patient status, restoring confidence

and reassuring the soldier that he had experienced a normal response to abnormal stressors.¹⁰

In the intensive casualty studies following World War II, combat exhaustion received unprecedented scrutiny. Researchers found a higher incidence of

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battle fatigue casualties encountered among units in higher intensity combat and in units with prolonged exposure to combat, poor cohesion, ineffective leadership and higher rates of wounded or killed in action.¹¹ In Korea and Vietnam, stresses like defensive posture, lack of a clear enemy and substance abuse contributed to increased battle fatigue casu-

alties.¹² By identifying precipitants, leaders could now train to offset them and prevent battle fatigue.

In the Korean War, lessons from World War II remained fresh, and forward treatment of battle fatigue casualty by battalion surgeons was the norm. Innovations such as buddy aid appeared. Psychiatric casualties accounted for only five percent of out-of-country evacuations.¹³ The Korean War also saw the implementation of “KO” teams comprised of a psychiatrist, a social work specialist and a clinical psychologist.¹⁴ The primary mission of these mobile teams was to augment a medical clearing company.

In Vietnam, KO teams found their role limited to augmenting fixed medical facilities.¹⁵ This constraint, coupled with a poorly defined combat zone, troop rotations and theater evacuation policies obscured principles of combat psychiatry, namely, to maximize prevention and treat battle fatigue. By 1971, 61 percent of all medical evacuations from Vietnam were neuropsychiatric, indicating an abrogation of the principles of PIES. Recognizing this decline, the Army redesignated KO teams as OM teams in 1972 and through emphasis on mobility, refined their role to focus on preventive mental health care.¹⁶

During the Persian Gulf War, OM teams deployed to Southwest Asia and there engaged in a vigorous campaign to assess units’ cohesion and perceived readiness for combat, train leaders and troops in controlling combat stress and provide feedback through all echelons of command—from company commanders to Army Central Command—on morale, readiness and controlling combat stress. During demobilization, the OM teams worked with chaplains and other mental health workers to prepare soldiers and their families for reunions.¹⁷

In 1992 the Army activated the medical detachment, CSC, as a successor to the OM team and as a corps-level adjunct to division mental health. The CSC mission is to provide comprehensive stress control support to a division or to two or three separate brigades or regiments through six primary functions of the CSC:

- *Consultation.* Liaison with and provide preventive advice to commanders and staff.
- *Reconstitution support.* Assistance to attrited units at field locations.
- *Combat neuropsychiatric triage.* Sorting battle fatigue casualties into categories based on how far forward they can be treated; also, determining which

conditions are battle fatigue and which represent neuropsychiatric illness.

- *Stabilization.* Stabilizing severe battle fatigue casualty or neuropsychiatric cases and evaluating RTD potential or preparation for transport or evacuation.

- *Restoration.* Treating battle fatigue casualty with rest, water, food, hygiene and activities to revive

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their confidence in soldiering—80 to 85 percent of battle fatigue casualties are RTD within 1 to 3 days with restoration.

- *Reconditioning.* An intensive program lasting a week or more involving physical and military training and psychotherapeutic activities in a non-hospital setting.¹⁸

Organization of Mental Health Assets Available to the Commander

Presently there are six active component CSCs, six US Army Reserve (USAR) CSCs and no National Guard CSCs. The Reserves also have four CSC medical companies. The basis of allocation (BOA) of the CSC detachment is one per division; the BOA for the CSC company is one per two divisions. The CSC is comprised of 23 personnel.¹⁹ The detachment headquarters and restoration section set up in the division support area, often collocated with the main support medical company or in some instances, a combat support hospital. The CSC prevention teams move forward to the brigade support area where they collocate with the forward support medical company.

Other mental health assets available to the commander are:

- *Division mental health service (DMHS).* A 10-member team headed by a psychiatrist assigned to the main support medical company in the division support command. This element is the primary resource for commanders within the division for

CSC. The DMHS has the further responsibility of providing comprehensive mental health care to the division.

- *Area support medical battalion (ASMB) mental health section.* A 10-member team headed by a psychiatrist (assigned through the professional filler system). This section provides stress control and mental health care throughout the ASMB's area of operations (AO).

- *Separate brigades' mental health section.* In light brigades one behavioral science noncommis-

sions forward to the division area to reinforce CSC detachment teams operating there.²⁰

Employment of the Medical Detachment, Combat Stress Control

US Army Field Manual (FM) 8-51, *Combat Stress Control in a Theater of Operations*, and FM 22-51, *Leader's Manual for Combat Stress Control*, provide general descriptions of the use, employment and effectiveness of combat stress control. Each lays out a broad foundation of knowledge that leaders and planners can use to control combat stress.

Real-world experience, however, is the best trainer. The following are four case examples of the CSC in operation. Each highlights the different capabilities of the CSC as described in FM 8-51 and in doing so, shows combat stress control as a combat multiplier.

Operation Arrowhead Scrimmage.

In March 1998 Prevention Team 1 from the 98th CSC deployed with the 3rd Brigade, 2d Infantry Division, to the Yakima Training Center (YTC), Yakima, Washington. Team 1 maintains an habitual relationship with the 3rd Brigade that included deployments to the National Training Center in May 1997, and YTC in January-March 1997.

While in garrison, the prevention teams from the 98th CSC train assigned units in controlling combat stress. Each of the detachment's three teams supports the major subordinate commands stationed at Fort Lewis, Washington; when those units go to the field, their assigned prevention teams go with them.

This affords the 98th CSC valuable training while providing combat stress control to the affiliated unit.

During *Arrowhead Scrimmage* the 98th CSC prevention team treated five soldiers from the 3rd Brigade for symptoms of battle fatigue; four of these soldiers returned to duty within 72 hours. They would have otherwise been sent back to garrison and lost to training. Instead, their confidence restored, they completed training with their unit.

Operation Laredo Sands. In February 1998 Prevention Team 2 from the 98th CSC deployed for two weeks to Laredo, Texas in support of the 864th Engineer Battalion (Combat, Heavy). The 864th En-

sioned officer (NCO) is assigned to the medical company; in heavy brigades, one mental health section, comprised of a behavioral science NCO and two behavioral science specialists is assigned. These personnel advise the commander on mental health and stress control issues.

- *Medical company, combat stress control.* Presently RC with BOA of one per two divisions. This unit is oriented towards controlling combat stress to the communications zone and combat zone. It may send



US Army

gineers had deployed in early January 1998 to build roads and buildings for Joint Task Force (JTF) 6.

Beginning in October 1997, Team 2 and the leadership of the 864th Engineers developed a comprehensive combat stress control support plan that targeted areas of concern that the leadership and the CSC identified as potential hazards during the battalion's deployment.

The 98th CSC team trained each company in battle fatigue signs and symptoms, stress and anger management and conflict resolution. Team 2 briefed squad leaders and platoon leaders on the mission of the CSC and trained them in steps they could take to offset deployment stressors their soldiers faced. Team 2 also met with the 864th Engineer's family support group to address concerns related to the stress of deployment and redeployment faced by families.

In the Laredo AO, Team 2 conducted unit assessment interviews. These interviews were a consultative tool for the command and began with an interview of the battalion commander and his staff. Each company commander was then interviewed, and this process continued down the chain of command to the platoon and squad level. Through these interviews the CSC determined the command's view of the operation and morale of the troops. The team then interviewed groups of soldiers at their work sites throughout the 864th's area of operations and briefed the chain of command back up to the battalion commander on the findings of these interviews. This process served two important functions—it provided practical information to the command and the small-group interviews with the soldiers allowed them the opportunity to vent.

The prevention team provided mental health consultation to the battalion surgeon and reviewed sick call logs for trends (none were identified). No soldiers from the 864th Engineers required evacuation for mental health reasons during the two-month deployment.

Operation Joint Endeavor. In December 1995 the 84th Medical Detachment, CSC from Fort Carson, Colorado, deployed to Bosnia as part of Task Force *Eagle* in Operation *Joint Endeavor*. There the 84th CSC coordinated its effort with the DMHS of the 1st Armored Division and together provided seamless combat stress control within the theater.²¹

Task Force *Eagle* remained in Bosnia for one year, the better part of which (from the soldier's per-

spective) was spent without a determined endpoint. The 27-member 84th CSC had 10,860 soldier contacts during its 352-day deployment. Significant among these numbers are 921 command consultations and 135 soldiers held for restorative care. Of the soldiers who used the 84th CSC's restoration

In each, the CSC provided commanders with combat stress control, and through this, enhanced the unit's effectiveness. Weapons and soldiers are concrete, quantifiable and measurable means by which a commander can modify his combat power; controlling combat stress is neither quantifiable nor measurable, but can alter the course of the battle.

services, 85 percent returned to duty after staying with the CSC for an average of six days.²²

The 84th CSC also debriefed survivors and observers of tragedies. The CSC responded on request of command and within 48 hours of the critical event. These debriefings reduced unit tensions and helped reduce soldier anxiety and dysfunction due to stress caused by the event. Moreover, through its efforts, the CSC gained credibility with the command.²³

During the deployment, 15 task force soldiers attempted and one completed suicide, for an annualized rate far below the Army-wide rate of 14 suicides per 100,000 soldiers.²⁴ The 84th CSC provided suicide prevention (and other) classes in theater to leaders, chaplains and medical personnel and distributed cards and flyers to thousands of soldiers. The 84th CSC set up a 24-hour phone line to answer concerns from leaders about stressed soldiers.

Operation *Joint Endeavor* proved to be a success. Warring factions remained separated. Elections occurred. More important, although the US contingent represented one-third of the Implementation Force, US soldiers accounted for only 14 percent of those killed (or dead of natural causes) during the operation.²⁵ This success is rightly attributed to leadership and training. Leaders—from task force commander to squad leader—participated in CSC training, and in their attention to this detail enhanced the safety and effectiveness of soldiers.

Operation Sea Signal. In June 1995 the 98th Medical Detachment, CSC(-), from Fort Lewis, deployed to Guantanamo Bay (GTMO), Cuba, to join

JTF 160. The JTF mission was to provide humanitarian assistance, reception, housing and subsistence facilities, and medical care for migrants; support US Coast Guard interdiction and transport to GTMO operations; provide a safe and orderly environment for migrants, US personnel and property; coordinate with appropriate agencies and provide support for the screening, processing, paroling and movement of migrants; and take all possible measures to optimize the interim and long-term quality of life among migrants.²⁶

The 98th CSC, in conjunction with the 83rd CSC, replaced the 85th CSC Detachment and the 616th CSC Company. The 98th CSC integrated into a joint medical task force whose mission was to provide direct care to over 20,000 Haitian and Cuban refugees. US Army personnel provided the bulk of the mental health professionals and leadership to the mental health treatment arm. In addition to providing outpatient mental health care to migrants, the 98th CSC cared for a cadre of dangerous psychiatric inpatients confined to a Navy brig.

The after-action report from the 98th CSC's deployment reported incidents of—

- Conflicts of interest between mental health professionals' roles as migrant care givers and evaluating clinician for the purpose of deportation; and
- Inequities in the component services' personnel rotation plans.²⁷

No other CSC prevention efforts or interventions with US forces deployed to GTMO were reported.

These examples provide real-world demonstrations of CSC capabilities. Significant in all of these is that leaders thought to ask for this resource, planned its inclusion and then used it. Although the CSC may not have been critical to mission success or completion, its use in Yakima, Laredo, Bosnia and to a lesser extent, GTMO, enhanced



US Army

the supported unit's capabilities and readiness.

During *Arrowhead Scrimmage*, the 98th CSC conducted a doctrinal restoration exercise. Consistent with historical data, 80 percent of soldiers referred to the CSC for treatment returned to duty. During *Laredo Sands*, the 98th CSC conducted consultation and exercised preventive measures. In both of these operations, the 98th worked through the leadership of the supported units, establishing credibility and providing CSC training for them. Further involvement early in the planning process optimized combat stress control and the use of the CSC.

Operation *Joint Endeavor* is a singular success story in combat stress control. The command in-

volvement in training and implementing combat stress control required an in-depth understanding of the assets available (DMHS, CSC). This coordination led to the successful development of a theater mental health support plan consistent with FM 8-51 and RTD rates for battle fatigue that were consistent with historical expectations.

JTF 160 used the 98th CSC as mental health assets have been traditionally employed (consider the KO teams used to augment hospitals). This lack of appreciation for the CSC's capabilities diminished its effectiveness. However, this deployment occurred relatively early in the joint environment's understanding of the CSC detachment.²⁷ Moreover, while CSC doctrine developed with support of a US Army combat division in mind, JTF 160 combined Army, Air Force and Navy personnel in a noncombat, but nonetheless hostile and inhospitable, environment.

One could argue that the employment of the CSC was uninformed; however, a stronger argument can be made for their use being judicious, given the nature of the operation and the threat. Further, through its direct mental health care for the migrant population, the CSC provided some relief to the US forces assigned to protect and guard these refugees. Additionally, it consulted with leaders on the effectiveness of refugee management, directly supporting the JTF mission of optimizing quality of life.

In none of these case examples did the CSC operate in the environment or fashion for which it was ostensibly designed. Yet in each, the CSC helped commanders control combat stress, and through this,

In World War I, treatment of shell shock or "war neurosis" consisted primarily of evacuation far from the front. However, this practice encouraged greater numbers of casualties. More important, these casualties did not improve with evacuation and were lost to combat. By 1917, both the British and the French had established principles of psychiatric casualty management that called for simple, immediate treatment as close to the front as possible, and both armies expected that soldiers would return to duty.

enhanced the unit's effectiveness. Weapons and soldiers are concrete, quantifiable and measurable means by which a commander can modify his combat power; combat stress control is neither quantifiable nor measurable, but can alter the course of the battle. Modern commanders, faced with intense, continuous combat, or with low-intensity, ambiguously contained peacekeeping missions have the CSC medical detachment as a tool to optimize their units' performance. MR

NOTES

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11. Jones, *Textbook of Military Medicine: War Psychiatry*, 13-16.
12. Ibid., 16-20.
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14. FM 8-51, 1-10 and 11.
15. Ibid., 1-11.
16. Ibid.
17. Ibid.
18. Ibid., 2-1-2-10.

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20. MAJ Simon Pincus and MAJ Dave Benedek, "Operational Stress Control in the Former Yugoslavia; A Joint Endeavor," presented at the AMEDD Behavioral Science Short Course, Tampa, Florida, 27 April through 2 May 1997.
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25. MAJ Simon H. Pincus and LTC Theodore S. Nam, "Psychological Aspects of Deployment: The Bosnian Experience", presented at the American Psychiatric Association Annual Meeting, San Diego, California, 17-22 May 1997.
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27. E.C. Ritchie, D.C. Ruck and M.W. Anderson, "The 528th Combat Stress Control Unit in Somalia in Support of Operation Restore Hope," *Military Medicine*, 1994, 159 and 372-376. Similarly, the 528th Medical Detachment, CSC activated on 16 December 1992 and deployed on 6 January 1993 in support of Operation *Restore Hope*, encountered ambiguity over its role.

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Leadership

Today's recruiting problems are not new, but during the drawdown, the Army could cover its failure to enlist faces by giving up fewer spaces. That tradeoff opportunity is past. Keith Hauk and Greg H. Parlier describe the converging pressures that leaders now face, and outline some countervailing programs. Lest today's problems seem overwhelming, Hill presents the Army's historical recruiting problems and shows common challenges and responses. To keep leaders of even full-up units from being overwhelmed by the pace of operations, Daniel J. Klecker and Jay Peterson explain how a purposeful battle rhythm protects planning and execution time for subordinate organizations.

D-Day D+1 D+2 D+3 D+4 D+5 D+6



Recruiting: Crisis and Cures

Major Keith B. Hauk, US Army, and
Colonel Greg H. Parlier, US Army

TODAY'S ARMY FACES a manpower challenge as significant as any in the history of the all-volunteer force (AVF), and certainly the most acute since its accession failure of fiscal year (FY) 1979.¹ The US Army Recruiting Command (USAREC) finished fiscal year 1999 almost 6,300 accessions short of the Regular Army (RA) accession mission and over 10,500 accessions short of the US Army Reserve (USAR) accession mission. Exacerbating this situation are three unique factors with which the Army must contend.

First, fiscal year 1999 truly marked the end of the drawdown and with it the end of the lower and easier-to-achieve accession requirements. During the drawdown, many of the Army's chronic recruiting problems were masked by end-of-FY accession mission reductions designed to achieve specific manpower reductions. The service began each FY with a particular recruiting mission to support that year's authorized end strength—and then failed. The difference between mission requirements and actual achievements was "forgiven," thus allowing the Army to pay part of its drawdown bill with recruiting shortfalls. This phenomenon started in FY 1993 and continued through the end of FY 1998 when the Army could no longer underwrite accession mission failure. Hence, years of forgiveness for less-than-adequate recruiting performance, with year-end recruiting write-offs, are over. All services—including the Army—must now replace their manpower losses one for one.

Second, the market dynamics facing recruiters today are the most challenging in the history of the AVF. The nation's economy is extremely strong with record low unemployment and a tight labor market. In November 1999 the US Department of Labor reported the nation's jobless rate had fallen to 4.1 percent, a 29-year low. Furthermore, as of the end of January 2000, the nation entered its 107th consecutive month of economic growth—the long-

Financial assistance for post-secondary education is widely available and the growth of public and private college funding has significantly diluted the effectiveness of the military's Montgomery G.I. Bill and other college fund programs. . . . In fact, with such ease of funding, the United States has come about as close as it can get to make college free, or as military sociologist Charles Moskos calls it, "the G.I. Bill without the G.I."

est period of sustained growth since the 1960s.

This is not the first time that the AVF has had to contend with low unemployment and a strong economy; however, it is the first time that the AVF has had to deal with sustained low unemployment. Even if unemployment were to increase slightly, the economy's current deflationary conditions would likely keep public confidence in the economy high and initially only produce citizens who are unqualified for military service. Simply stated, barring an unforeseen shock to a critical economic input such as oil, there is no quick end in sight to this era of economic prosperity.

Third, high-quality youth today have expanding opportunities in both industry and academia. A recruiting market with very low propensity for military service compounds these tough labor market factors; most applicants seek Army service for personal benefit—often monetary—and not for service-based reasons. College continuation rates—the number of graduating high school seniors going directly on to college—are at an all-time high and expected to continue growing over the next few years. Financial assistance for post-secondary education is widely available, and the growth of public and private college funding has significantly diluted the ef-

This is not the first time that the AVF has had to contend with low unemployment and a strong economy; however, it is the first time that the AVF has had to deal with sustained low unemployment. . . . The Army faces a demand-side economic problem with which it is currently ill-equipped to cope. In fact, the term “all-volunteer force” is a misnomer; today’s military is really an “all-recruited force.”

fectiveness of the military’s Montgomery G.I. Bill and other college fund programs. All but four states in the union (Arkansas, Idaho, Nebraska and South Dakota) offer some form of college financial assistance program, to say nothing of widespread, non-military federal assistance programs such as Pell Grants and federal student loans. In fact, with such ease of funding, the United States has come about as close as it can get to make college free, or as military sociologist Charles Moskos calls it, “the G.I. Bill without the G.I.”

These factors represent fundamental changes to the environment from which the Army must recruit its soldiers, and they are changes with which the service is not particularly well equipped to contend. The Army must transform its recruiting practices lest these burgeoning, near-term accession shortfalls become chronic, long-term problems. Indeed, given these environmental changes, all services must reform their practices. The Army in particular has taken significant steps to address its current FY recruiting problems. However, many of these steps are resource intensive and with few exceptions represent short-term adjustments to existing programs that were not designed with today’s economy or youth market in mind. Such short-term fixes will not engender a long-term solution because they do not address the realities of the current environment.

People are the lifeblood of the armed forces, particularly the Army. Since high school graduates are and will remain a scarce and expensive resource, the military, like any other employer, will have to compete in the economic marketplace. Throughout the history of the AVF, manpower has been assumed to be available in whatever quantity the military demanded. With the changes in the economic and educational environments, the Army is currently ill-equipped to cope with a demand-side economic problem. The term “all-volunteer force”

is a misnomer; today’s American military is really an “all-recruited force.”

The Problem

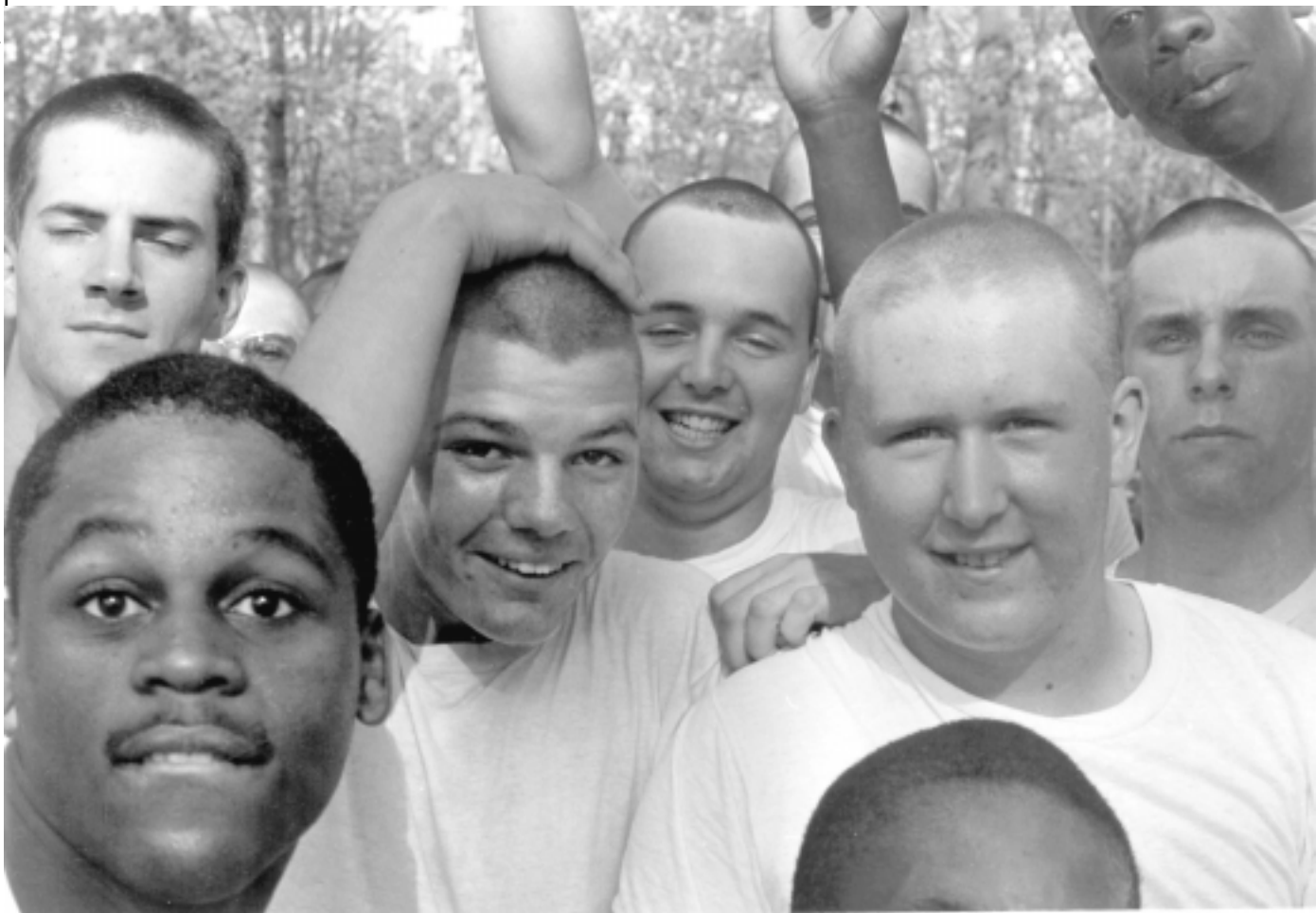
The impact of these changes is twofold. First, the armed forces must change their recruiting practices and accession policies and reinvent themselves within the marketplace to successfully recruit qualified young men and women. The second is far more ominous in the scope of its effect. Simply put, the inability of the US armed forces to meet their military manpower acquisition requirements has become a binding strategic constraint on the military’s ability to support the national security strategy.

The anecdotal evidence supporting these two assertions is compelling and incontrovertible. The US Navy missed its FY 1998 accession requirement by over 7,000 sailors; the Navy achieved its FY 1999 requirement but remains short of its mandated end strength and typically puts ships to sea at well under 100 percent manning. The Army and Air Force missed their FY 1999 accession requirements by 6,300 soldiers and 1,700 airmen. While the Army has made its FY 2000 accession requirement to date, the Air Force is already over 1,000 recruits short of its target. The Air Force, stretched to its breaking point by the Kosovo air campaign, needed a four-month stand-down following the cease-fire to reconstitute its equipment and personnel. The Army, due to the exertions of simultaneous Balkan peacekeeping operations, reported readiness for two of its ten divisions, the 1st Infantry Division (Mechanized) and 10th Mountain Division, at the C4 level (for personnel) and struggled to deploy a single brigade-sized task force in a timely fashion to affect the outcome of the Kosovo air campaign.

It is not the intent of this article to address a litany of specific policy options that the Army, and indeed the entire military, should take to change recruiting practices and develop a military manpower acquisition strategy that breaks current manning constraints. Instead, this article suggests a way to build a framework under which the military can research and develop specific options, thereby allowing a military manpower acquisition strategy to evolve, both in response to the marketplace that supports it and to the national security strategy that it underwrites.

More of the Same Won’t Work

Before we as a nation can build a framework to support a viable military manpower acquisition strategy, we must understand why “more of the same” will not work. President Richard N. Nixon’s commission on an AVF (the Gates Commission) was



A potential appeal to the college youth market could bundle lower initial pay and a short term of service (perhaps even shorter than the current minimum two-year term) with complete post-service educational benefits—tuition, room and board, books and stipend. In essence, such recruits could be the citizen-soldiers of the new century.

not formed to construct a military manpower acquisition system for the United States. Fueled by an American body politic grown weary of the Vietnam War and the draft, the commission was specifically chartered to develop a plan to eliminate conscription and move to an AVF. In a final report numbering over two hundred pages, only four pages discussed alternative military manpower systems, and nowhere did it address how best to provide military manpower in support of national strategy. Instead, it viewed conscripted military service as a burdensome social tax—rather than a time-honored responsibility of American citizenship—and applied free-market, labor economic theory that pegged military to civilian pay comparability as the tool to leverage voluntary enlistments. This notion of military service as a tax that market economics can overcome counters longstanding American ideals of civic responsibility which the citizen-soldier concept has been historically embodied.

In an era of military operations other than war with their concomitant numerous deployments, military service is a very different experience today than

it was during the Cold War, and the structure of enlistment decisions made by today's youth has altered radically with that era's end. Youth attitudes toward military service, as evidenced in the Department of Defense's Youth Attitude Tracking Survey, have adversely shifted over time. The resultant choice not to buy the military's current enlistment products begs the question of whether econometric models using 1970s and 1980s data can accurately forecast 21st-century enlistment behavior.

Most current approaches that leverage existing enlistment programs are based on that same outdated 1970s and 1980s econometric modeling, are not competitive in today's marketplace, are resource intensive and will continue to throw good money after bad. Why? Direct economic incentives such as pay, cash bonuses, loan repayment programs and college money appeal most to those who have the greatest economic disadvantages. That is, those incentives have greatest appeal to those with the fewest alternatives in the college or labor market relative to their peers. In America, this means mostly poor, predominantly inner city (and in some cases

Regardless of what means we as a nation choose to man this 21st-century Army, we must beware the danger of becoming too much like the army of Victorian England. That force—small and professional, but undermanned and overworked—became extremely adept at fighting the brushfire wars along the peripheries of empire but, over time, lost sight of its raison d'être and led an entire generation of British youth to slaughter in World War I.

rural) youth. Continuing with business as usual will lead to an “economic conscription.” Our military manpower acquisition programs will appeal only to the more disadvantaged segments of American

youth, and we will become a society in which the most prosperous let the poorest citizens take responsibility for defending the nation.

Furthermore, can a military manpower system designed in 1970 to man a forward-deployed, Cold War armed force in a bipolar world adequately man a force-projection Army that supports a fundamentally different national security strategy in which the United States is the world's sole superpower? The verdict would appear to be no. Today's AVF does not demographically represent, ethnically or economically, the society it defends; it is unable to cope with burgeoning deployment and operational tempo issues; and it is experiencing difficulty attracting sufficient numbers of qualified recruits.

What Could Be Done

While specific policy options are beyond the scope of this article, consider briefly two of the three

The All-Volunteer Army: Historical Challenges

Major Christopher M. Hill

Manpower acquisition methods have had a significant impact on the ability of the US Army to conduct its mission effectively. Maintaining an all-volunteer force (AVF), especially during prosperous economic times for our nation, is expensive, difficult to manage and requires significant attention from strategic leaders. A small cadre of professionals in peacetime rounded out with militia in times of large conflict is the traditional foundation of our Army personnel system. Since its earliest stages, our country has had an aversion to large standing Armies, relying on manpower surges to fight wars.¹

The first nondraft period—an Army sustained from volunteers—occurred following World War I in about 1920. The draft replaced the volunteer system in 1940 to increase endstrength in response to events in Europe. Except for a slight interruption in 1947-48, the draft lasted until the advent of the modern AVF in 1973.

Four separate periods of recruiting difficulty emerged—the mid-to-late 1920s, the late 1930s, 1973 and the late 1970s. Each period had similar causal factors—large gaps in military to civilian pay ratios, strong economies and high employment. While these economic factors were most substantial, eroding benefits and declining resources also played a role in the difficulties. Solutions implemented during those troubled times have great implications for the future. Lessons from periods of Army recruiting difficulty shed light on the future of the volunteer-based manpower acquisition strategy.

Immediately following World War I the nation wanted to return to a small, professional Army that was away from the public's eye. Most Americans believed intervention in World War I had been a mistake and were opposed to future involvement in conflicts in Eu-

rope. At the same time, the war department intended to maintain a larger Army—approximately 250,000—to balance the larger standing European armies. Recruiting difficulties began in the early twenties and lasted until the stock market crash in 1929.²

Several factors contributed to the recruiting problems of the 1920s. World War I ended suddenly, and the nation had no established recruiting system. National employment improved through the 1920s, and between 1923 and 1925 the average monthly employment index in manufacturing industries was 100. Additionally, enlisted soldiers' pay trailed their civilian counterparts' significantly. In 1921, a private earned 30 dollars per month and a private in a specialized military occupational specialty received up to 60 dollars per month. A full-time, low-skilled civilian laborer earned 26 dollars per week in 1920. Meanwhile, the Army physical plant and general living conditions of soldiers deteriorated significantly. These factors, combined with the public attitudes about the military, produced significant recruiting challenges and endstrength failures from 1920 to 1929, except in 1922.³

The Army tried several different approaches to solve its recruiting problems of the 1920s. The general focus was on selling education, vocational skills and eventually recreation programs. Slogans like “earn while you learn” and “quality not quantity” joined patriotic appeals for high-quality volunteers. The Army added recruiters and even used regular line units for recruiting; the war department called on clergy and state governors. The Army did eventually add a pay raise for servicemen in 1922, a housing upgrade in 1925 and cash bonuses emerged. All of these measures helped mitigate the

biggest quality of life concerns in today's military—pay and retirement. The Joint Chiefs' top priority in FY 1999 to remedy this burgeoning readiness crisis was to increase military pay and repeal the 1986 military retirement reform act, commonly known as *Rechux*. Unfortunately, even with the 4.8 percent across-the-board pay raise in January 2000, a pay raise in July 2000 targeted at specified pay grades and raises through 2006 indexed at one-half percent over the Bureau of Labor Statistics' Employment Cost Index, if current economic conditions persist we will not appreciably close the current gap, which is almost 14 percent.² Instead of chasing the pay comparability issue as outlined by the Gates Commission—and thereby entering into a de facto bidding war with corporate America that it cannot win—the military needs to acknowledge the fact that it needs both career and noncareer per-

sonnel and structure its pay scales accordingly.

As an example, consider the college youth market, one area into which Army recruiting is making tentative, initial inroads. The need for growth into this market is a function of sheer numbers; currently, about two of every three graduating high school seniors enroll in college in the autumn following high school. However, for college youth—particularly those seeking a hiatus from school—current career-oriented Army enlistment incentives such as pay, retirement benefits and job training are not attractive alternatives. A potential appeal to this market could bundle lower initial pay and a short term of service (perhaps even shorter than the current minimum two-year term) with complete post-service educational benefits—tuition, room and board, books and stipend. In essence, such recruits could be the citizen-soldiers of the new century.

damage of poor recruiting in part, but none solved the problem. Even with adding all the additional benefits, military pay still lagged behind civilian counterparts'. The national leadership managed the personnel problem by reducing endstrength.

Eventually, the end to recruiting challenges came after the stock market crash of 1929.⁴ The Great Depression eased recruiting difficulties but only for a short time. The biggest factor to ease recruiting in the early 1930s was the high unemployment and poor economic conditions resulting from the depression. Recruiting challenges began again when the Army took a 15 percent pay cut as part of the *New Deal* in 1933. The formation of the Civilian Conservation Corps (CCC) followed increasing pressure on recruiting, because a person joining the CCC made more money than a private. The recession of 1937-38 should have helped in the recruiting challenge, but the significant increases in endstrength requirements offset the economic effects.⁵ Solutions for recruiting challenges included involving line units and garrisons in the recruiting effort, eventual restoration of pay and decreasing recruit quality in 1936. Again, these measures mitigated damage, but the Army still struggled with endstrength goals from 1935 until the establishment of the *Selective Service Act* in 1940.⁶

The draft was almost uninterrupted from 1940 until the early 1970s. In 1970, President Richard M. Nixon established the Gates Commission "to develop a comprehensive plan for eliminating conscription and moving towards an all-volunteer armed force."⁷ The commission aimed to meet peacetime manpower and quality requirements without conscription.⁸ Because of the commission's efforts, the modern AVF was born in

1973—with staunch congressional and military opponents. In 1973, the Army failed to make its endstrength by about 10,000 soldiers, prompting charges of internal sabotage from the media.⁹ This shortfall and increasingly high costs of recruiting left the AVF future in doubt.

The economic environment preceding the AVF had a significant effect on the problems of 1973. Unemployment was down to 4.5 percent in 1965 and 4.9 percent in 1970.¹⁰ Soldiers also faced a large pay gap with respect to their civilian counterparts. Then national unemployment began rising, and in 1972 Congress approved a first-term soldier pay raise of 61.2 percent to close the pay gap.¹¹ The stage was set for successful recruiting. However, the demand for higher quality recruits to ensure the long-term success of the AVF, coupled with the move of the US Army Recruiting Command from Fort Monroe, Virginia, to Fort Sheridan, Illinois, offset the favorable conditions.

Several actions saved the AVF. The first, and perhaps most important, was a detailed sales program by Secretary of the Army Howard Callaway to national and Army leaders. Congress also allowed an endstrength reduction in 1973, which lightened the burden on recruiters while increases in special-duty pay lifted recruiters' morale. Finally, a new program, the Trainee Discharge Program (TDP) provided a way to overcome quality constraints. The TDP allowed the over-accession of low-quality recruits, followed by close monitoring of these recruits through training and culminating with selection of those soldiers with the best potential to serve. The Army released lower-potential soldiers before their 179th day of active duty to prevent accumulation of veteran's benefits and related costs. The AVF rebounded and

The retirement system is even more problematic. Despite all the congratulatory backslapping over its repeal, lost in all the briefings, discussions and information papers concerning how to amend *Redux* was the opportunity to fundamentally change the entire military retirement system. While fighting for essentially the same old system, the services missed an opportunity to design a retirement system for a 21st-century workforce. A contribution-based retirement system—like a 401(k)—could be a powerful recruiting tool if structured to meet the desires of a 21st-century worker, especially if it includes things like personal choice, competitive returns on investment, transferability and vesting short of 20 years.

The military is almost the only remaining employer in the United States that offers an industrial-age retirement system which requires staying at least 20 years with the organization to become vested in the retirement system. That system has lost its draw because today's savvy youth realize that, in an information-age economy, they will change jobs several times over the course of their working lives. One of the major findings of respected market researchers is that youth in our prime market want a retirement system they can design and control, one that applies to short-timers as well as career employees.³ In fact, as far back as 1970 the Gates Commission recognized in one of its findings something that still rings true 30 years later—the need for fun-

succeeded; success was so good the Army asked for an endstrength increase in fiscal year 1975.¹²

The most dramatic AVF challenges occurred in the late 1970s. The GI Bill and enlistment bonuses were the staples of early AVF success, and the Army began public advertising to help recruiting in the early 1970s.¹³ These programs drove up costs for recruiting. As economic conditions began to improve in the late 1970s and provided a tougher recruiting environment, costs rose even more. In the late 1970s the Chairman of the Senate Armed Services Manpower and Personnel Subcommittee warned, "The all-volunteer force may be a luxury that the United States can no longer afford."¹⁴

The increased costs caused the Congress and the Army to slash recruiting resources beginning in 1976. The Army discontinued the GI Bill and replaced it with a more cost-effective Veteran's Assistance Education Program (VEAP). In the improved economic environment, pay comparability lapsed, the nation's economy expanded, employment rose and federal education assistance in the private sector increased.¹⁵ The Army missed recruiting objectives between 1977 and 1979.

Solutions to the problem initially followed the historic pattern. Quality decreases provided manpower, and as a result the number of recruits scoring in the upper half of the Armed Services Vocational Aptitude Battery test declined from 49 percent in 1973 to 26 percent in 1979. In the early 1980s, other significant changes fueled the recruiting force. The first was a series of pay raises—11.7 percent in 1981 and 14.3 percent in 1982.¹⁶ The second was the creation of the Army College Fund. This program transformed the VEAP and became even more powerful than the GI Bill had been, attracting youth from the high-quality market. The Army also added a two-year enlistment option. This set of changes increased quality and fueled the AVF until the late 1990s.

The periods when the Army experienced difficulty recruiting an AVF share features. Previously implemented solutions are instructive now and for the future. Recruiting will be expensive, with costs increasing proportionally as applicant quality improves. If the operational

environment permits, a reduction in Army endstrength is a management tool to maintain quality while reducing costs. Maintaining an AVF, especially during prosperous economic times for our nation, is costly, difficult to manage and requires significant attention from national leaders. **MR**

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damental change in the military retirement system to ensure the viability of the AVF:

“Because retired pay is deferred, it has little value for an individual in his early years of service, even if he is seriously considering a military career . . . yet, the armed forces need both noncareer and career personnel. The group organized to study compensation . . . recommended: increasing military pay sufficiently to enable military personnel to contribute six and one-half percent of their salaries annually to their retirement account without any loss in net income, and to introduce partial vesting after five years of service.”⁷⁴

What Should Be Done

Under current national security strategy, the Army must develop a more robust expeditionary capability to bear the burden of minor wars, fill power vacuums or protect some larger economic interests. The formations best suited to these endeavors are small, professional, preferably volunteer forces—especially since protecting our interests abroad may not always enjoy overwhelming popular support at home.

Some could interpret part of what has been presented here as a call for returning to the draft. It is most assuredly not. The Army’s stated vision to field a smaller, strategically deployable force built around adaptable warfighting structures able to operate at any point along the spectrum of conflict cannot be realized by a conscripted force. Conscription is an industrial-age concept well suited to manning mass armies, but of little use in manning a force to conduct warfare in the information age. To call for a return to the draft is to argue against historical trends and the still-evolving revolution in military affairs toward smaller, more capable and professional formations. In fact, virtually every western power has either moved or is transforming its military to a recruited, as opposed to a conscripted, force.

The institutions of America—the military, higher education and industry—are engaged in a competitive “death match” for the services of America’s youth and by all accounts the military is losing. If the military manpower acquisition system is to support national strategy, this competitive dynamic must be transformed into a complementary system in which those institutions work together for their collective good and that of the nation. As military sociologist Charles Moskos has pointed out, relations between the military and civilian society in the information age are evolving to a point that distinctions between the two are becoming less significant. In fact, the public is beginning to recognize that both military and civilian service have a sort of civic equivalence. The Army’s nascent “Partnership with Industry” program—which guarantees an Army applicant private sector employment in his Army-trained job skill following honorable completion of

One of the major findings of respected market researchers is that youth in our prime market want a retirement system they can design and control, one that applies to short-timers as well as career employees. In fact, as far back as 1970 the Gates Commission recognized in one of its findings something that still rings true thirty years later—the need for fundamental change in the military retirement system to ensure the viability of the AVF.

military service—is a first step in this direction, whereby two institutions can complement one another. Another is the reinvigoration, through the college market, of the citizen-soldier ideal.

As it did when it left the malaise of the Vietnam War, the nation must again examine just what kind of military it wants to have. Just as the Gates Commission became a principal enabler of that change, so too should the nation again charter an apolitical, “blue-ribbon” commission to enable change in the military and specifically address the need to develop a viable military manpower acquisition strategy. Underwritten by credible research that identifies the needs and desires of today’s youth, such a commission could develop a military manpower acquisition strategy that addresses the tangible requirements of America’s youth while appealing to their intangible needs and civic responsibilities. Most important, this approach can produce a manpower acquisition strategy that supports national strategy by eliminating chronic under-manning in the military. There are several leaders of immense stature—retired Generals Colin Powell, Charles Krulak, Norman Schwartzkopf and Gordon Sullivan to name a few—could forge a national youth policy that supports a viable, 21st-century military manpower acquisition strategy.

The United States does not have to go it alone. The current national security strategy of engagement and enlargement mandates that we will, where practicable, operate our military forces in a multilateral coalition. Many other western powers share those constraints as they transition away from conscripted militaries. We could we break those binding strategic manpower constraints that inhibit our ability to execute national strategy by working in a multilateral framework to address the underlying economic, educational and operational conditions.

Regardless of what means we as a nation choose to man this 21st-century Army, we must beware the danger of becoming too much like the army of Victorian England. That force—small and professional, but undermanned and overworked—became extremely

Furthermore, can a military manpower system designed in 1970 to man a forward-deployed, Cold War armed force in a bipolar world adequately man a force-projection Army that supports a fundamentally different national security strategy in which the United States is the world's sole superpower? The verdict would appear to be no.

adept at fighting the brushfire wars along the peripheries of empire but, over time, lost sight of its *raison d'être* and led an entire generation of British youth to slaughter in World War I. We cannot simply wish away the responsibilities imposed on us as the world's sole superpower, nor can we attempt to man a military that will answer those responsibilities using enlistment concepts and programs that have not been updated in 30 years. We must not allow a future generation of American youth to be slaughtered because we did not both hold fast to first principles and then adapt to change.

Today's national leadership do realize recruiting's effects on executing national strategy. In recent testimony to the Senate Armed Services Committee, the Army Chief of Staff acknowledged the need for a larger Army to tackle the missions imposed by current strategy. He further cited recruiting's constraint on that growth:

Senator Cleland: "Are we running out of Army?"

Are we in need of more personnel? Are you in need of more troops just to handle your worldwide commitments?"

General Shinseki: "I've got to go and fix my recruiting challenge. We came up short last year . . . it's hard for me to make an argument for more end strength even though the analysis makes that case, if I can't demonstrate we can recruit."

Whatever strategic options the United States chooses to man its 21st-century military will be judged on how well they fill the ranks. Additionally, those options could well be evaluated against Clausewitz' so-called trinity: the primordial violence, hatred and enmity that stir people to support war or military operations other than war; the play of chance and probability in war's outcome; and war as a subordinate instrument of policy. The current AVF with its use of economic manning tools and people's lack of passion for post-Cold War operations have eroded the linkage between the people and their military. That eroded linkage degrades the military's capability to favorably affect those elements of chance and probability inherent in an operation's outcome.

Even voluntary military service has become, in essence, burdensome; it's all right for "those other people" to join, but not my kids. To reconnect the people to their military and posture both for success in the 21st century, we must rebuild an integrated civic virtue of service. This virtue will embody the ideals of the citizen-soldier while focusing on how best to answer the nation's operational demands. **MIR**

NOTES

1. GEN Maxwell Thurman and Robert L. Phillips, "On Being All You Can Be: A Recruiting Perspective, Past, Present and Future." *Future Soldiers and the Quality Imperative: The 2010 Conference* (Headquarters, USARWEDC: Fort Knox, Kentucky, 1995). (In Fiscal year 1979, the US Army failed its accession mission by over 17,000 accessions. Amid these recruiting failures, then Army Chief of Staff GEN Edward C. "Shy" Meyer proclaimed the "hollow" Army.

2. *National Defense Authorization Act for Fiscal Year 2000* (Washington, DC: Government Printing Office, 1999), 750.

3. "GenXers & Youth: Implications for Recruiting," *Yankelovich Monitor*, Yankelovich Partners, October 1999.

4. Report of the President's Commission on an All-Volunteer Armed Force (February 1970), 62.

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Battle Rhythm

Lieutenant Colonel Daniel J. Klecker, US Army, and
Major Jay Peterson, US Army

FUNCTIONAL BATTLE RHYTHM minimizes the friction inherent in combat activities by providing predictability to subordinates and better synchronizing different echelons of command. However, battle rhythm itself is an intangible commodity that is often difficult to embrace. This article proposes a doctrinal definition for battle rhythm, analyzes battle rhythm models and provides discussion and recommendations within such a framework.

Current Army and joint doctrine do not define the term “battle rhythm.” A proposed doctrinal definition for battle rhythm is “a deliberate cycle of command, staff and unit activities intended to synchronize current and future operations.” Activities at each echelon must incorporate higher headquarters’ guidance and commander’s intent, and subordinate units’ requirements for mission planning, preparation and execution.

Timing Key Events. A synchronization process is often referred to as the targeting or wargame process. Regardless of the semantics, the targeting process synchronizes the battlefield operating systems (BOS) in time, space, purpose and end state. A functional battle rhythm synchronizes the BOS in time, space and purpose and across different echelons of command. This article is not intended to detail the mechanics of the targeting process but rather to address and illustrate effective timing of targeting and other key functions across three command echelons in the brigade task force.

Observations at the Joint Readiness Training Center (JRTC) indicate that many units do not arrive at their training rotation with an established battle rhythm. Most units discover the need for a more formalized battle rhythm that is integrated with its higher and subordinate units and attempt to develop one during the rotation. Unfortunately, unfamiliarity with such a process, when combined with enemy activity, produces friction and degrades a valuable training opportunity. JRTC scenarios compress activities to a greater extent than a unit will probably experience on the future battlefield. Therefore, a battle rhythm that is effective at the JRTC will likely prove functional elsewhere.

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The need for a predictable, synchronized battle rhythm is especially critical during operations in low-intensity conflict environments. Low intensity conflict, when the enemy situation is often vague, creates conditions in which an effective battle rhythm significantly enhances unit performance. During other operations, effective time management, use of realistic timelines and appropriate use of functional standing operating procedures usually produce an effective battle rhythm.

This article focuses on light infantry brigade operations. The genesis of an effective battle rhythm is an effective targeting process at the brigade level. To be most effective and provide predictability during low-intensity operations, brigades should focus on the future fight and plan at least 48 hours out. This allows time to acquire and develop intelligence about the enemy and adequate time to plan, coordinate, integrate and synchronize the assets he has or can request. The end state of the brigade targeting process should be a fragmentary order (FRAGO) directing subordinate activities two days out and beyond. Additionally, as the brigade focuses on future operations (related to the mission’s end state) the FRAGO would presumably address the transition of BOS elements to the future operation.

This need for battle rhythm is evident at the JRTC. The typical exercise includes establishing a lodgment, either through an airborne assault or air assault forced entry into the battlefield, as the initial mission. At the JRTC, rotational brigades that

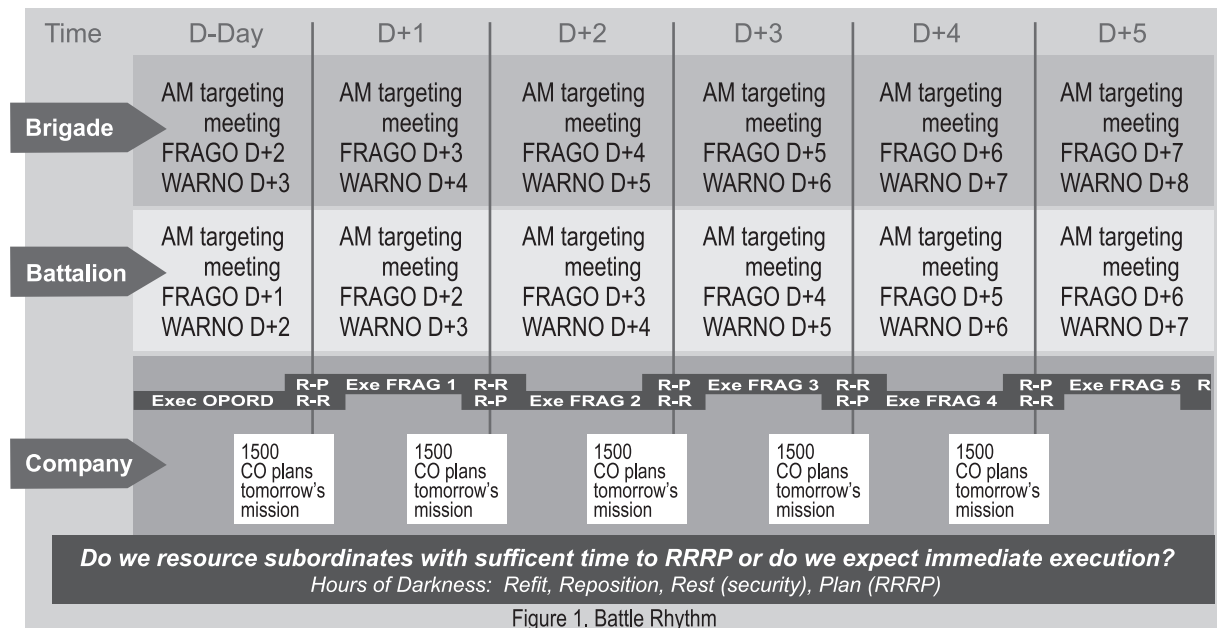


Figure 1. Battle Rhythm

Regardless of the semantics, the targeting process synchronizes the battlefield operating systems (BOS) in time, space, purpose and end state. A functional battle rhythm synchronizes the BOS in time, space and purpose and across different echelons of command.

maintain a 48-hour battle rhythm and whose FRAGOs address future operations increase the subordinate battalions' ability to synchronize their fight with the higher command's end state. Without some form of battle rhythm, most units will remain reactive and subordinate units will be unable to anticipate branches and sequels to their current mission. Such scenarios often leave soldiers trying to do great things—without the required time for planning and preparation.

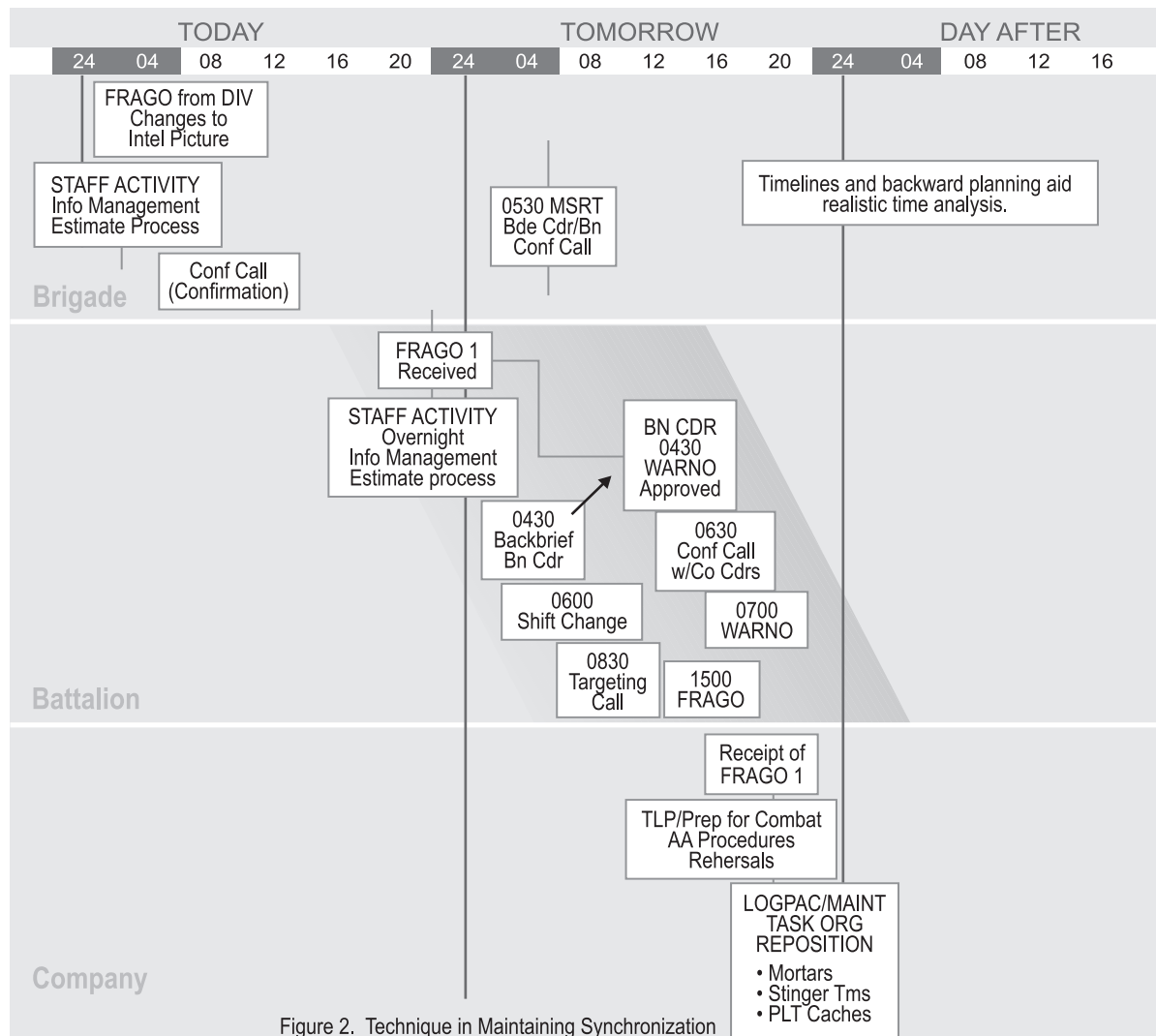
The brigade targeting meeting, conducted on D-Day, addresses battalion activities that must occur on D+2 and beyond. The battalion targeting meeting addresses the next 24 hours. Companies are continually executing operations but must have an opportunity to conduct adequate planning and preparation for future operations (Figure 1). An established battle rhythm gives the companies a predictable window to conduct activities such as future planning, logistic operations and necessary movement.

Last-minute changes. There should be a predictable point when a FRAGO will be approved and subordinates receive guidance in time for planning and preparation. For the purpose of discussion, the brigade should make no more changes to its plan after an early-morning conference call between the bri-

gade and battalion commanders (Figure 2). This practice permits the company commanders to execute today's mission while the battalion staff begins planning tomorrow's activities and issues an appropriate FRAGO. The battalion FRAGO should be disseminated no later than 1500 hours daily to company commanders, allowing the minimum time necessary for the companies to conduct troop leading procedures while continuing to execute the current mission.

Frequent observation of units training at the JRTC reveals that higher headquarters lack appreciation for impacts of last-minute decisions on subordinate unit commanders. Most units possess the flexibility to react to a directive such as "change in plans, move your company to Zone C06 to destroy an enemy mortar acquired by the Q-36 radar at grid 123456." The unit may be able to move quickly and begin searching for the enemy mortar, but if there is insufficient time for troop leading procedures, avoidable friction usually occurs and companies pay an unnecessarily high cost to accomplish the mission. Examples of activities routinely displaced by last-minute changes include: subordinate leader estimates, fire planning, preparation of vehicles for troop movement, adequate movement planning (cross leveling of key personnel and equipment), delivery of mission specific equipment or munitions and timely task organization.

Retaining the initiative. Units training at the JRTC usually intend to establish a battle rhythm but are often distracted by unexpected threats or requirements that occur inside the decision cycles of the relevant headquarters. For example, an untemplated enemy mortar could disrupt establishment of essential brigade assets such as firing batteries or logis-



tic sites. Retaining a reserve (sometimes locally referred to as a quick reaction force) under brigade control is an option that keeps the enemy out of the friendly force's decision cycle, allowing better opportunity for an undisturbed battle rhythm.

Considerations for the task organization of a reserve should include mobility, firepower, lethality, command and control (C2) and logistics. This reserve can service targets in the "now" decision cycle and can be employed using battledrill checklists. While the reserve services these targets, subordinate units can continue to develop the situation in their zones and fight the battle as they had earlier planned. Reserves based upon an infantry platoon augmented with tanks have been employed successfully at the JRTC.

Positioning the reserve is also an important consideration. Locating the reserve near vulnerable friendly assets should be considered, particularly early in the deployment process, until other force

protection measures have had sufficient time to mature. The reserve could locate near the brigade tactical operations center (TOC), aviation assembly areas, field artillery position areas or the brigade support area. Proximity to subordinate units may also be an important consideration.

Technique in Maintaining Synchronization.

Figure 2 provides an example timing of activities that could occur within an infantry brigade. This example demonstrates the activities of higher headquarters in synchronization with subordinates to reach company execution. While entries on the timeline are not exhaustive, they illustrate how to nest and deconflict key activities across three echelons of command.

In this example, the brigade targeting team conducts the targeting process and issues a brigade FRAGO for battalion execution beyond 48 hours from the current time. The battalion receives the brigade FRAGO during the night and conducts ini-

Unit facilities may have to displace during the course of operations. . . . Daily assessing the necessity of TOC displacement will allow the unit to situate alternate nodes for C² to prevent disrupting the established battle rhythm. The goal is to decide whether, what, when and where to displace—rather than accept the enemy's dictates.

tial analysis, planning and preparation for the morning's targeting meeting. At 0530, the brigade commander conducts a conference call with all of his commanders, highlighting any areas of concern, verifying his intent for the next 48 hours. This conference call should be the last time that the brigade influences subordinate activities in the subsequent 24-hour period. The shift-change briefing occurs in the battalion TOC at 0600 hours, is attended by all key staff members and serves as the commander's morning update. The briefing is immediately followed by a battalion commander's net call with company commanders to provide the commander any additional information he requires.

Using the brigade FRAGO and information provided at the shift-change brief and discussions with the brigade and company commanders, the battalion commander and targeting team conduct the morning's targeting meeting. Company commanders are executing today's mission while the battalion commander and staff plan tomorrow's activities. Activities at the brigade TOC include a targeting process and planning for the next period, 36 to 48 hours ahead of the company.

The targeting process should result in predictable products and may include:

- FRAGO, with updated graphics as required.
- Reconnaissance and security plan, situation template, event template and intelligence summary.
- Overlay of both friendly and enemy minefields.

The battalion staff develops and reproduces the products for dissemination to subordinate units by 1500 hours today so that they can plan for tomorrow's execution.

One technique for distributing the FRAGO involves the commander during his battlefield circulation. He can personally articulate the intent and receive confirmation briefs by the company commanders. When this technique is not possible, other expedient means can be used and the battalion commander can follow later with a radio conference call.

Similar techniques could be considered by the brigade commander; however, the larger distances involved in brigade operations may render FRAGO distribution via the brigade commander's battlefield circulation often infeasible. Sending the products of the targeting process to subordinates by tactical facsimile is a prompt and secure method of distribution. Subsequent battlefield circulation or voice communication can be used to elaborate the higher commander's intent and provide a vehicle for subordinate commander's confirmation briefs.

Displacing Assets. The displacement of critical assets must be considered within the framework of the unit's battle rhythm. Unit C² and combat service support facilities may have to displace during the course of operations. If possible, displacement timing should be planned around activities supporting the unit's battle rhythm. Daily assessing the necessity of TOC displacement will allow the unit to situate alternate nodes for C² such as the brigade tactical command post to prevent disrupting the established battle rhythm. The goal is to decide whether, what, when and where to displace—rather than accept the enemy's dictates. Enemy penetration of the decision cycle disrupts battle rhythm, causes difficulty in evacuating casualties and equipment and slow unit momentum.

Synchronizing all echelons of command is difficult. The desired end state of a unit battle rhythm is synchronized activities at all echelons. Establishing a battle rhythm is one approach to providing subordinate leaders and soldiers with predictability and appropriate time to plan and prepare for future operations, while focusing on the immediate fight. The result will be greater likelihood for successful operations that meet the commander's intent while minimizing friction and personnel and equipment losses. **MR**

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The Race for Wake Island

by Major M.R. Pierce, US Army

Following Japan's attack on Pearl Harbor in December 1941, the US Pacific Fleet lay in ruins, and the Japanese were just beginning their dizzying string of victories. One bright spot in the chaos was the US Marines' dogged defense of Wake Island and its sister islets Wilkes and Peale. The islands, isolated strips of coral in the central Pacific 1,000 miles west of Pearl Harbor and 500 miles north of the Marshall Islands, sat astride east-west lines of communication for both the United States and Imperial Japan.

In 1935, PanAir requested permission to use Wake Island as a refueling stop for its Pacific Clipper air service. With an eye toward the future, PanAir began making Wake Island habitable, building a hotel and a seaplane ramp.¹

In 1940, the first of 1,000 civilian contractors arrived to turn the island into a military-funded Naval Air Station. The contractors were to build a three-legged airstrip complete with hangars and maintenance facilities, dredge the lagoon to make it ready for a squadron of seaplanes and build barracks for the Marines who would occupy the island.

The Marines Set Up Shop

The first Marines to arrive on Wake Island in August 1941 found that the contractors had built a sprawling camp for themselves near the PanAir facility, but work on the air station consisted only of a few ammunition bunkers, one leg of the airfield and no barracks. The 1st Defense Battalion Marines quickly began preparing defenses, despite a lack of equipment.

On 6 December 1941, commander Major James Devereux called an alert to test the readiness of the defenses. The men had worked 12-hour days continuously since his arrival on 15 October. Pleased with the results, he

gave his overworked command the next day off.

Following their day of rest the Wake Island force set about their usual duties on 8 December. Around 0730, commander Winfield S. Cunningham and Devereux were notified that Pearl Harbor had been attacked. The message warned that an attack on Wake Island could be imminent. Within 45 minutes defenses were manned and ready.

While PanAir personnel prepared to leave the island, the civilian contractors' foreman offered his men for the defense. He and Cunningham agreed that the best course of action would be for the civilians to continue work on the air station. Eventually, some of the civilians, many of them World War I veterans, fought admirably beside the Marines. Others faded into the jungle until the battle was over.

The Japanese Attack

Around noon, 27 Japanese land-based bombers attacked.² The defenders had little time to react. Eight planes were destroyed on the ground. The Japanese bombers then withdrew before the airborne patrol could intercept them. The air raids meant to destroy the island's defenses continued daily until 11 December.

Unknown to the defenders, a Japanese task force of three light cruisers, six destroyers, two transports that had been converted to destroyers, two regular transports and two submarines was on its way to the island.³ Japanese planners felt that 450 soldiers of the Special Naval Landing Force, Japan's equivalent of the Marines, would be sufficient to seize Wake Island.

Lookouts on Wake Island spotted the ships approaching and alerted the command. The defenders held their fire to give the impression the

air raids had destroyed the defenses. They hoped to lure the Japanese ships into range. For over an hour they were bombarded as the Japanese ships came closer. At 4,600 yards, the Marines' 5-inch batteries opened fire scoring several hits, including some on the Japanese flagship. Caught by surprise, the Japanese laid down a smoke screen as the force withdrew. The Marines sank one destroyer with all hands, and the remaining planes sank another.

The Japanese received their first defeat, and for the only time during the remainder of the war in the Pacific, their amphibious assault was repulsed. However, as the defenders cheered their success other wheels were in motion.

CINCPAC Shifts Sideways

As the Japanese Task Force limped away from Wake Island, the Commander in Chief Pacific (CINCPAC) staff was already planning to reinforce the island. The news of the Japanese defeat lifted the staff's spirits. The defenders had bought Admiral Husband E. Kimmel time to execute a full-scale relief and to strike back at the Japanese.⁴

Kimmel wanted to use the island as bait to lure the Japanese Navy into an ambush.⁵ His plan was based on the US fleet's being intact and able to gain intelligence on the Japanese fleet's location.⁶ Neither held true. Following the raid on Pearl Harbor, Chief of Naval Operations Admiral James R. Stark cabled Kimmel with the two options he saw for Wake Island: reinforce the defenders with Marines, aircraft and a radar set or evacuate all personnel after destroying the equipment. Stark left it to Kimmel's discretion to reinforce, resupply or evacuate both Wake Island and Midway.⁷

Kimmel's plan was to divide his carriers into three task forces. Task Force 8 formed around the USS *Enterprise* and was commanded by Admiral William Halsey. Vice Admiral Wilson Brown commanded Task Force 11 around the *Lexington*. Task Force 14, commanded by Admiral Frank J. Fletcher, formed around the *Saratoga*. Each task force would have two to three cruisers and several destroyers.

These meager forces only highlighted the Pacific Fleet's crippled state. Task Force 8 would protect approaches to Oahu. Task Force 11 was to raid Jaluit and tie down Japanese forces. Task Force 14 was to move to a point off Wake Island where it could launch its planes.⁸ Meanwhile, the *Tangier*, a converted seaplane tender, was to dash to the island, deliver reinforcements and evacuate civilians.

On 12 December, Secretary of the Navy Frank Knox arrived on a fact-finding mission to gather information on the Pacific Fleet's status and affix blame for the Pearl Harbor fiasco.⁹ Kimmel's staff briefed Knox on the relief operation, which he approved. However, his official report would have a serious impact on the upcoming battle.

An Attack to Save Face

The Japanese did not have to seize Wake Island. They could have written it off and starved out the garrison, but they wanted it for its strategic importance and to save face.

The Japanese augmented the next assault force with heavier cruisers and more destroyers. They increased the landing force from 450 to 1,000. As an indication of their determination, if things went badly, the destroyers would be beached, and the crews were to assist the assault.¹⁰ The most telling stratagem was the detachment of two aircraft carriers, the *Hiryu* and the *Soryu*, from the withdrawing Pearl Harbor force to support the assault.

The Race is On

Kimmel's staff estimated it would take Task Force 14 six and one-half days to steam 2,000 miles to Wake Island.¹¹ What they failed to anticipate was the task force's need to re-

fuel the smaller destroyers and zig-zag as an antisubmarine measure.

On 15 December, Kimmel issued an operation order only seven pages long. The order was a clear, concise document whose only assumption was that Wake Island would not have fallen before Task Force 14 arrived. Missing from the order was guidance if the ships made contact with a Japanese force before reaching the island. Such guidance might have eliminated indecision later.

D-day for Wake Island's relief was 1030 23 December. The *Tangier*, with her load of supplies and eager Marines, left Pearl Harbor on 15 December to deliver supplies and aircraft to and evacuate wounded and a portion of the civilians from Wake Island. The *Saratoga* and her escorts left Pearl Harbor on the evening of 16 December. The next day she rendezvoused with her support ships, and Task Force 14 began its 12-knots-per-hour trek to Wake Island.

CINCPAC Blinks

The defenders on Wake Island had bought Kimmel time to strike at the enemy and salvage his reputation, but events in Washington were moving fast. Following his inspection, Knox reasoned that he had two conflicting demands. One was to strike at the enemy, which Kimmel's plan would accomplish. Second, there had to be an accounting for the Pearl Harbor debacle. He concluded that to protect the Roosevelt administration, Kimmel had to go. Knox knew that relieving Kimmel would jeopardize the Wake operation. Knox met immediately with President Franklin D. Roosevelt, presented his findings and shortly thereafter, Kimmel was relieved of command.¹²

Kimmel was devastated, personally and professionally. Personally it was an embarrassment. Professionally it said he had been found wanting at a time of crisis. But more important, Kimmel "did not want to be relieved in the middle of an operation he had set in motion."¹³ As it turned out, if Kimmel had remained in command one more week the Battle of Wake Island might have ended differently.

Admiral Chester A. Nimitz, highly

respected throughout the Navy, was to replace Kimmel. Admiral William Pye was to be the temporary CINC until Nimitz arrived. Pye was in an unenviable position. He had temporary responsibility for a crippled fleet engaged in a risky offensive operation—one he had not planned or whole-heartedly supported. It is understandable he doubted the wisdom of the Wake Island relief effort.¹⁴ His own command rested on the bottom of Pearl Harbor; now he was responsible for what was left of the fleet. He did not want to be in the position of handing the incoming commander a list of new casualties if the Wake Island operation failed.¹⁵

The will to see Wake Island relieved was beginning to break down. Admiral Wilson E. Brown, commanding Task Force 11, was also beginning to have grave concerns about the mission. And, on 17 December, CINCPAC received intelligence that Japanese Admiral Chuichi Nagumo was ordered to detach his carrier division to support the second attack on Wake Island.¹⁶ A wave of doubt rushed through CINCPAC.

Pye's staff reassessed the situation and decided to continue operations. However, Pye's Chief of Staff, Rear Admiral Milo F. Draemel, recommended that Task Force 11 be diverted to support Task Force 14, thus concentrating two carriers in the area.¹⁷ Pye concurred and ordered Brown to link up with Fletcher. However, to ensure the link-up, Pye ordered Fletcher to slow down to give Brown time to catch up.¹⁸ In addition, Pye ordered Fletcher not to close within 200 miles of Wake Island.¹⁹ This order suited both Fletcher and Brown. Brown could move ships away from the threat of land-based aviation, and Fletcher could refuel his force.

Support for the relief of Wake Island still appeared positive if not overwhelming. Pye dispatched a patrol plane to the island to tell Cunningham to prepare to receive reinforcements and to evacuate most of the civilians. Unfortunately, the plane's crew had broadcast hourly weather reports during their flight, which Japanese intelligence intercepted. Anticipating that Wake Island was to be reinforced, Nagumo

decided to attack earlier than planned.²⁰

After returning to Pearl Harbor, the patrol plane's crew painted a desperate picture of the island's defense. Pye later recalled: "The situation at Wake seemed to warrant taking a greater chance . . . even at the . . . possible damage to major ships of Task Force 14."²¹ His was hindsight. During the crisis he did not seem willing to take a greater chance. However, he did free Fletcher from the 200-mile restriction and authorized the *Tangier* to make a high-speed run toward Wake Island.

The Japanese Invade

Hours after the patrol plane left Wake Island, the Japanese attacked. Another wave of doubt rippled through CINCPAC. Pye's concern was that he was now sending his ships into an ambush.²² However, there had been no indications the Japanese were aware that Task Force 14 or any US force was in the area. It might still have been possible to make a fast run to Wake Island and catch the invasion force as it was unloading, which would take a large measure of boldness and risk.

On the morning of 22 December, Task Force 14 was 515 miles from Wake Island. Fletcher, assuming he could find himself in combat at some time the next day, decided it was time to refuel his destroyers. After 10 hours of frustrating, time-consuming effort, four destroyers were topped off. Fletcher called off the operation and decided to finish fueling later.²³ Some historians criticize Fletcher for the decision to stop to refuel. They feel that because his destroyers were one-half to three-quarters full, he should have cut loose the *Neches* and made a high-speed run to Wake Island.

Admirals are paid to be bold, but not rash, and Fletcher was not a rash man. He had weighed all the factors: he could be in combat the next day; his destroyers would burn fuel at a faster rate in combat; he was responsible for one of only three carriers in the Pacific; and the location and number of Japanese carriers was unknown. Fletcher made the more prudent decision based on the facts as he knew them.

The Japanese invasion force arrived at Wake around midnight of 22 December. As the invasion began, Cunningham tried to contact the submarines *Triton* and *Tambor*, which had been operating in the area, hoping to divert them to attack the assault force. He received a message from CINCPAC: "No friendly vessels should be in your immediate vicinity today. Keep me informed."²⁴ This was not a message to inspire confidence in a commander locked in a desperate fight.

After receiving word of the Japanese landing, Pye and his staff discussed the future of the relief attempt. The staff was divided between those who wanted to immediately withdraw Task Force 14 and those who urged Fletcher to increase speed and attack the Japanese.²⁵

On 23 December, Fletcher's task force was 425 miles from Wake Island. It would take 12 hours for his force to reach the island, but there was a chance he could still catch the invasion force and inflict some damage.

Around 0600 Cunningham radioed: "Enemy on island. Issue in doubt."²⁶ This message seems to have taken some of the "offensive spirit" out of Pye. He countermanded his first order, telling Fletcher merely to attempt to evacuate the beleaguered island forces.

At 0652, Pye received Cunningham's final message: "Enemy on Island. Several ships plus transports moving in. Two DD [destroyers] aground."²⁷ The situation looked grim. Pye's three carrier task forces were operating independently. These carriers represented the Pacific Fleet's only offensive capability. Two Japanese carriers were in the area, and he had no knowledge of the others' locations. And, he was only temporarily in command; soon he would hand the fleet over to Admiral Chester Nimitz. Pye decided to recall Task Force 14. It was surely as difficult and painful as the decisions Cunningham was making on Wake Island.

Around 0200 23 December, the final assault began. The defenders stubbornly fought back despite overwhelming odds. On Wilkes Island, the Americans had gone on the of-

fensive and killed or captured every Japanese soldier. However, because of poor communications, neither Cunningham nor Devereux knew of this success. At 0700, after hours of desperate fighting, Cunningham authorized Devereux to surrender.

Post Mortem

Were the defenders abandoned to their fate? Or were they a tactical sacrifice to maintain the Pacific Fleet's strategic viability? Pye answers: "The use of offensive action to relieve Wake had been my intention and desire. But when the enemy had once landed on the island, the general strategic situation took precedence, and the conservation of our naval forces became the first consideration. I ordered the retirement with extreme regret."²⁸

Could a situation such as Wake Island occur today? Most definitely. Small US detachments and units scattered about the globe participate in strategically vital operations in extremely hostile environments.

Current operations share another significant feature with Wake Island—the presence of civilians, usually volunteers serving with relief organizations. Many such organizations are international, which adds another layer to the problems that could face a modern-day Cunningham. Civilian presence will also influence the decisions of commanders on the ground. Twelve hundred unarmed civilians on Wake Island weighed heavily on Cunningham as he made the decision to surrender his command. A leader today would be no less cognizant of the presence of noncombatants. And, the press will always be there to remind us should we forget.

Probably the single most significant change from the actions and operations conducted in World War II is the advent of instantaneous news—now called the "CNN factor." How different might the decisions on Wake Island have been if a news crew had been there to photograph and catalog every aspect of the defense? How much of a liability would the island have been if Americans could have seen daily the defenders' heroism or, more poignantly, their pathetically weak defenses? It would

have been much harder to convince the American people that recalling the relief force was strategically sound. In the end, leaders will continue to make difficult strategic decisions based on the country's needs—not the number of civilians or the amount of news coverage.

Aftermath

After Cunningham surrendered, he donned his dress blues to meet his captors. To Devereux fell the humiliating task of going to each position telling the men to surrender. Some were incredulous. One of the Marines advised: "Don't surrender, [sir]. Marines never surrender. It's a hoax."²⁹

The biggest surprise awaited Devereux when he went to Wilkes Island. The Marines had gained the initiative through luck, courage and resolute leadership. They had gone on the offensive and saved the island. As Devereux approached the island, he was surrounded by "a few grubby, dirty men who came out of the brush with their rifles ready."³⁰ Reluctantly, the men surrendered.

By 1400, all resistance ceased. Despite their surrender, Wake Island's defenders struck a moral and physical blow to Japan. While exact Japanese losses during the 15-day battle will never be known, over 1,000 soldiers died; four warships were sunk and eight were damaged; and 21 air-

craft were shot down.

US losses were negligible: 58 Marines, 11 sailors and an undetermined number of civilians.³¹ Equipment losses included 12 aircraft, six 5-inch coastal guns and twelve 3-inch anti-aircraft guns. The psychological benefit cannot be quantified, but "Remember Wake Island" became the country's rallying cry.

The Japanese decided to keep 100 of the civilian contractors on the island to complete the airbase, which by 1943 became functional. When US Navy planes attacked the island, the Japanese commander believed the US was preparing to invade and executed the civilians. The US did not invade and the commander's action has never been explained. The US never returned to Wake Island. Ironically, for all its supposed pre-war strategic importance, the island played no role in either side's strategy for the remainder of the war.

NOTES

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3. Lieutenant Colonel Frank O. Hough, Major Verle E. Ludwig and Henry L. Shaw, *Pearl Harbor to Guadalcanal: The History of the U.S. Marine Corps Operations in World War II, 1* (Washington, DC: Historical Branch, Headquarters, US Marine Corps, 1965), 116.
4. Rear Admiral Edwin T. Layton, Captain Roger Pineau and John Costello, "And I was There": *Pearl Harbor and Midway: Breaking the Secrets* (New York: William Morrow, 1985), 334.
5. Captain Edward L. Beach, *Scapegoats: A Defense of Husband E. Kimmel and Walter C. Short at Pearl Harbor* (Annapolis, MD: Naval Institute Press, 1995), 105.

6. In June 1942, Admiral Chester Nimitz used Midway in essentially the same way, the Japanese Navy lost four carriers.

7. Robert J. Cressman, *The Battle for Wake Island: A Magnificent Fight* (Annapolis, MD: Naval Institute Press, 1995), 152.

8. These would be F2A Brewster Buffaloes. VMF 211 and 221 were from the same Marine Air Group adding to the Marines' desire to help their friends.

9. Gordon W. Prange, *At Dawn We Slept: The Untold Story of Pearl Harbor* (New York: McGraw-Hill, 1981), 584.

10. Robert D. Heintz Jr., *The Defense of Wake* (Washington, DC: US Government Printing Office, 1946), 37.

11. Stephen D. Regan, *In Bitter Tempest: The Biography of Admiral Frank Jack Fletcher* (Ames, IA: Iowa State University Press, 1994), 75.

12. Layton, Pineau and Costello, 330-33.

13. Cressman, 102.

14. Regan, 76.

15. Layton, Kimmel's and later Nimitz's intelligence officer, believed Pye's confidence and decisiveness was shaken by the Japanese attack.

16. Regan, 78.

17. *Ibid.*, 78.

18. *Ibid.*

19. Cressman, 183.

20. Cressman, 176.

21. *Ibid.*, 190.

22. Layton, Pineau and Costello, 340-41.

23. Cressman, 189-90.

24. W. Scott Cunningham with Lydel Sims, *Wake Island Command* (Boston: Little Brown, 1961), 124.

25. Regan, 79.

26. Cunningham with Sims, 133-34. Cunningham states his message was not intended as bravado but was a phrase he recalled from a novel by Anatole France, *The Revolt of Angels* (originally published in 1914).

27. Cunningham.

28. Duane Schultz, *Wake Island: The Heroic, Gallant Fight* (New York: St. Martin's Press, 1978), 145.

29. Devereux, 195.

30. *Ibid.*

31. The number of civilian casualties has been placed at between 33 and 80.

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Military Learning

by Captain Eric Higenbotham, US Army National Guard

During World War II, US and British armored units fought against the same foe on the same ground using the same equipment. US effectiveness improved dramatically in three years of active operations. British effectiveness improved at a much slower rate during their five years of activity.

The difference in British and US rates of wartime learning apparently relate to organizational infrastructure and the systems by which information was absorbed and codified. British army learning was hampered by

the lack of armywide doctrine and common tactical procedures and a decentralized command practice that delegated authority for much of the army's training, doctrine and organization to theater and unit commanders. In contrast, a dense network of channels allowed effective communication among officers within the entire US force, and common doctrine and training standards supplied the Army with the baseline or common language necessary to absorb new ideas and develop, test and implement new tactical protocols.

Combined Arms Warfare

In 1940, each of the primary combat arms enjoyed certain advantages over one or more of the others. For example, high-velocity antitank guns were capable of destroying tanks at 3,000 meters, approximately twice the range at which most tanks of the day could respond. However, antitank guns were highly vulnerable to artillery fire, which had a range of about 12,000 meters. In turn, artillery was vulnerable to tank attacks.

Of course, the actual dominance of one weapon system over another

depended on a host of factors, including terrain and unit mission. Therefore, the ability to deploy weapons quickly against the most appropriate targets, given their specific operational circumstances, determined tactical success.

The British Experience

In planning for Operation *Crusader* in 1941, British Eighth Army commander General Alan Cunningham intended to use mobile combined arms forces to sweep behind German forces entrenched in North Africa's "Sollum line." The bulk of British armor was deployed into the XXX Corps, which contained one infantry division and three tank brigades, each reinforced with infantry, artillery and antitank elements.

The XXX Corps was to slip around the German southern flank to Gabr Saleh, while British infantry divisions pinned down the German front. At or near Gabr Saleh, XXX Corps would defeat the German armor and, with its own flanks secured, crash down on the German rear.

After arriving behind German lines on 18 November, the anticipated German armored counterattack failed to materialize. The British XXX Corps became dispersed as its elements sought out the German armor. On 21 November, the two German panzer divisions converged on Sidi Rezegh, where the British 7th Brigade's tanks were deployed, destroying all but 28 of the British tanks. The next day, XXX Corps joined the battle, but the two remaining armored brigades arrived individually and were defeated in detail. By the evening of 22 November, only 44 operational tanks remained in XXX Corps.¹

Throughout these and subsequent actions, British armor operated independently of infantry, anti-tank and artillery forces. Robert Crisp, tank troop commander, 3d Battalion, Royal Tank Regiment, wrote a detailed narrative of the action in which he mentions the presence of artillery and antitank elements in the brigade, but he never discusses any action coordinated with them.² In a similarly detailed account, R.L. Crimp,

a member of one of the British 7th Armoured Brigade's infantry battalions, also fails to mention significant coordination of the unit's actions with brigade tank elements.³

This lack of coordination had dire consequences. When British armor encountered German antitank defenses, especially when those were backed by artillery and armored reserves, local British armor commanders had no choice but to run or charge. Crisp writes: "A German 88-mm gun could knock us out at 3,000 yards, whereas the maximum effective range of our 37-mm and 2-pounder guns was reckoned to be about 1,200. The result, in simple arithmetic, was that we would have to be within range of their tanks and guns for 1,800 yards before we could hope to get close enough to do any damage. Eighteen hundred yards, in those circumstances, is a long way. It is sixty-four thousand eight hundred inches. . . . The only answer lay in mobility, and pretty fast mobility at that."⁴

Mobility was not the only answer. Even a contemporary 81-millimeter mortar out-ranged the flat-trajectory 88-millimeter gun by over two kilometers. But this solution would have entailed the coordination of more than one type of weapon. The British 22d Brigade lost 52 tanks while fighting the Italian Ariete Division.⁵ But, while the British were impressed by the quality of German equipment, no one could argue that the Italians enjoyed any sort of materiel qualitative superiority.

Two years later, during Operation *Goodwood*, British armored divisions enjoyed only marginally better combined arms coordination. *Goodwood* was the first of two nearly simultaneous attacks—the other being Operation *Cobra*—designed to break out of the coastal area after the Normandy landings. The plan called for 2,000 heavy and medium bombers to hit various German-held targets. Tanks and other VIII Corps elements were to follow a rolling barrage fired by 500 guns, pass some small villages that dotted the area, then continue up the slopes of Bourguebus Ridge. Additional infan-

try forces, reinforced with armor, were to secure the flanks.

The plan failed, and poor combined arms coordination was largely to blame. The operation plan called for the 11th Armoured Division to bypass the village of Cagny and attack the ridge. Cagny had been bombed early in the morning, and only four German 88-millimeter antitank guns were functional. Had even a small force of infantry accompanied the British tanks, the town could have been taken. Instead, the division left behind a force of 16 tanks to screen the German position. As the morning progressed, German battle group commander Hans von Luck reorganized Cagny's defenses. Damaged tanks were recovered and put into line, and by noon, the Germans had eight functioning Mark IVs. Von Luck's gunners eventually destroyed all 16 tanks of the 11th Armoured Division's screening force.⁶

By 1100, British tanks were prepared to attack Cagny. However, the mechanized rifle battalion of the division's armored brigade was delayed. Until it arrived, all attempts to flank the German position and find a way into the town were repulsed. At 1600, the infantry battalion finally arrived, and "the village fell almost at once—because the Germans had no infantry either, only the guns and a single tank."⁷ The action at Cagny cost the 11th Armoured Division about 20 tanks and the Guards Armoured Division over 60 of its number. Despite the victory, the battle cost the British precious time at a critical point in the battle.

Similar problems plagued the Bourguebus Ridge attack. When the 11th Armoured Division encountered massed artillery fire from behind the ridge and antitank fire from on top of it, the division's single battalion of organic self-propelled artillery proved woefully inadequate. With no infantry and no artillery, the tanks were once again forced to charge the guns. Author John Keegan quotes an officer with the 3d Royal Tank Regiment: "It was just as the leading tanks were level with Hubert Folie when the fun began. I saw Sherman after Sherman go up in flames, and it

got to such a pitch that I thought that in another few minutes there would be nothing left of the regiment.”⁸ The British lost over 500 tanks—36 percent of the entire armored force—during the three days of Operation *Goodwood*.⁹

The US Experience

The goal of the German offensive around Kasserine Pass was to disrupt Allied preparations for the final push to Tunis. The attack threw US forces off balance. The 1st Armored Division lost 100 tanks, 57 half-tracks, 29 artillery pieces and 6,700 men, over half of whom were captured. Combat Command A (CCA) of the 1st Armored Division was deployed to defend the passes leading to Sidi Bou Zid, which sat astride the road to Kasserine Pass.

When the battle began, CCA elements were widely dispersed and only marginally task-organized. Brigadier General Raymond McQuillan had placed one infantry battalion on each of the two hills overlooking the road to Sidi Bou Zid. The two positions were too far separated to be mutually supporting, and they were too far from CCA’s artillery elements to receive support from them. The reserve, a battalion of tanks and a company of tank destroyers, was located to the rear of Sidi Bou Zid from where it could theoretically launch counterattacks to support the forward-deployed infantry. However, since the front was wide open and the flanks unprotected, little prevented the Germans from penetrating the entire area, blocking the reserve and isolating each element.

On 14 February, the 10th and 21st Panzer Divisions moved between and around the two US forward positions. By 0730, the Germans had completely surrounded the forward US infantry battalions. The German combined arms force of 83 tanks, supporting artillery and antitank weapons soundly defeated the single battalion of US tanks, then pressed on to Sidi Bou Zid.

In early 1943, most observers would have agreed that the US Army would never produce division- or

corps-size units capable of coordinating large-scale, combined arms operations. British and French junior officers commonly called the Americans “our Italians,” and British General Harold Alexander, arriving in North Africa during the Kasserine battle, said Americans were “ignorant, ill-trained and rather at a loss.”¹⁰ Over the next year and a half, the US Army improved dramatically. Operation *Cobra* showcased US Army capabilities far above those displayed in the battles for Tunisia.

Operation *Cobra*, launched seven days after Operation *Goodwood*, ruptured German lines. Facing a discontinuous defense organized around blocking positions and strong points, US forces attacked on parallel axes. Armor and infantry were cross-attached down to the platoon level, and the activities of tanks, infantry, engineers and artillery were highly coordinated. Where possible, infantry rode on top of tanks to keep up with and provide security for the armor.

While tanks attacked strong points, infantry leaders, through telephones rigged to the back deck of each tank, alerted tank commanders to unseen dangers. Artillery forward observers traveled on top of the lead tanks, taking advantage of mobility and added height to call in accurate and timely fire. When encountering resistance, tanks and self-propelled artillery laid down a base of fire, while infantry worked into assault positions. Engineers traveled with all of the columns and were deployed to demolish physical obstacles.¹¹

As in most battles, the infantry took particularly heavy casualties. For example, CCA, the 2d Armored Division’s leading task force, lost most of its infantry while attacking the town of Percy. Nevertheless, Percy was taken, and nowhere was progress blocked for the want of infantry or artillery. At one point, 2,500 Germans of the LXXXIV Corps tried to break out of the trap between Lenglonne and St. Denis. General Joe Collins wrote that “pointblank artillery and tank fire greatly aided

the armored infantry in breaking up the attack. After six hours of confused fighting, illuminated by burning vehicles, the 2d Armored held fast.”¹²

In contrast to the British and in spite of their prewar inexperience with armor, US soldiers learned quickly and developed highly effective armored divisions capable of conducting combined arms combat. Few Englishmen would call the Americans “our Italians” after 1943. Richard O’Connor, one of Britain’s most gifted armor commanders during the war, wrote, “Having seen a good deal of them [Americans] recently, I think there is a lot to be learned from them.”¹³

Theorists, Leaders and Cognitive Theory

It is easy now to find flaws or incongruities in individual British prewar theories of mechanized warfare. Nevertheless, what characterized that body of thought as a whole was its broad scope and general foresight. The ideas of J.F.C. Fuller and B.H. Liddell Hart provided inspiration for British armored advocates during the early interwar period. During the last year of World War I, Fuller developed “Plan 1919” that called for more than 5,000 tanks so “a carefully mounted tank, infantry and artillery attack could be launched, the objective of which [would be] the zone of the enemy’s guns; namely the secondary tactical zone some 10,000 yards deep.”¹⁴ The war ended before the plan could be implemented, but Liddell Hart expanded on Fuller’s ideas after the war, focusing much of his attention on how tactical success with mechanized units could be exploited to achieve decisive results at the operational and strategic levels.¹⁵

Liddell Hart was largely responsible for creating an experimental mechanized brigade in 1927, which gave a large number of later field commanders experience in armored warfare and provided a basis for continued discussion of mechanized warfare during the interwar period. A lively debate about the proper mix of

weapon systems in mechanized units ensued. Major General Sir Percy Hobart, commander of the 7th Armoured Division, believed that tanks could operate almost, although not entirely, independently on the battlefield.¹⁶ Brigade Major Vivyan Pope, at the Tank Corps Center felt there was a need for balanced elements of tanks and armored infantry.¹⁷ Despite varied opinions, combined arms coordination was clearly recognized as being necessary.

In the United States, little serious thought was given to mechanized units' organization, in part because the Army lacked armored vehicles or organizations with which to experiment. In Britain, armored units of one type or another were in continuous existence during the entire interwar period.¹⁸ The first US experimental brigade was not created until 1928 and was disbanded within three months. The brigade's only tanks were derelict French and British models that had been pulled out of storage and put in running order. The entire budget for armored vehicles between 1925 and 1939 totaled \$60,000, less than twice the projected cost of a single Christie tank in 1938.¹⁹ On 1 September 1939, the United States had 28 operational tanks.²⁰

US Army armor pioneers lacked budgets, equipment and organization. Most borrowed ideas from the British. General A.R. Chaffee Jr., the US Army's most prominent champion of armor, relied heavily on British reports for developing armor doctrine.²¹ Much of the opposition to armor was as much bureaucratic as it was intellectual. Nevertheless, the result was a complete lack of discussion and debate among US military officers on mechanized combined arms warfare.

Bureaucratic Politics Theory

Theories about the effects of bureaucratic politics on organizations surmise that vested interests frequently interfere with the rational functioning of organizations. Hence, the relative effectiveness of different organizations would seem to depend

in part on internal or external obstructions they face and the ways in which they cope with them. Was the British army more prone than the US Army to organizationally motivated obstructionism? A review of organizational politics in both forces reveals this was not the case.

Several students of World War II British operations have argued that while British theorists were ahead of their time, they were blocked from positions of responsibility by more conservative senior leaders who had risen from infantry and, particularly, cavalry commands.²² Undoubtedly, conservative forces were operating in the British army. However, the force's decentralized structure was far more conducive to experimentation and the free competition of ideas than was the more rigidly structured US Army.

British army officers belonged to one of two branches—infantry or cavalry—or to one of several corps, such as artillery, tank, engineers or ordnance. However, the core element in an officer's identity and prospects for promotion was his regimental standing. The regimental system was originally intended to facilitate the maintenance of colonial forces overseas. Each regiment, most of which had two battalions, was responsible for maintaining one battalion overseas.²³ Officers stayed within a given regiment until graduating to commands above battalion. Their assignments thereafter periodically included rotations in regimental management. Hence, although battalions were formed into brigades and divisions where possible, affiliation was always primarily to the battalion and regiment.

While outwardly promoting conservative values—exemplified by the traditions of the British regimental officers mess, polo playing and so on—the system allowed new ideas to flourish under the cover and protection of many overlapping structures. Experimentation frequently took place at the regimental level, and many of the best ideas were adopted by the rest of the force. British infantry had been experimenting with machinegun and antitank

carriers in the mid-1920s, and the artillery created the world's first self-propelled artillery piece—the 18-pound Birch Gun.²⁴

Based largely on 1934 maneuvers, during which mechanized forces had performed extraordinarily well, Chief of the Imperial General Staff John Montgomery-Massingberd ordered the entire army—infantry, cavalry and artillery—to accelerate the process of mechanization. Twenty-eight infantry battalions would be converted to mechanized machinegun battalions; the remainder would become motorized.

Before the war, several advocates for armor, including Fuller, embraced armor's cause with near-messianic zeal. They felt that professional armor officers had been denied access to authority and that maneuvers had been skewed to reflect poorly on the Royal Tank Corps, although there was little evidence to substantiate either claim.

In 1927, Fuller was appointed as the first commander of the experimental mechanized force, but he rejected the offer on the grounds that he would also be required to command a nonexperimental brigade, which would compromise the experiment. The rest of the tank corps did not share his objections. They tended to view the command arrangements as adequate and the establishment of the mechanized force as a great opportunity.²⁵

US Army armor advocates faced more bureaucratically motivated opposition to their ideas than did the British. US Army branches, particularly cavalry and infantry, tended to tightly control events. In 1930, Army Chief of Staff General Douglas MacArthur ordered both the infantry and cavalry to mechanize their units. Nether branch complied. Cavalry branch chief John Herr went so far as to say that he would not cut a single horseman to make room for tanks. In 1938, to underscore his position, he attempted to reintroduce the saber to the cavalry inventory.²⁶

In this environment, US armor enthusiasts could find little "space" within which to operate or purvey their ideas. And, in fact, the tank

corps, which had been formed in 1918, was abolished by the 1920 *National Defense Act*.²⁷ Despite the general advantages of clip-fed rifles over horses, cavalry officers came to dominate the US Army, providing a particularly large obstacle to the encroachment of armor.²⁸ The net effect of bureaucratic obstruction in the US Army was a lack of discussion about how combined arms tactics might be employed most effectively within mechanized forces. When war broke out in Europe in 1939, no US Army units had trained for such operations.

Although there were undoubtedly active opponents of mechanization in the British army, they met with far less success than did US military conservatives. However, while there might be some validity to the argument that bureaucratic politics hurt the British army's performance, it cannot explain the US Army's better wartime learning curve.

Continuous Improvement

The era of regular and planned innovation in industry has given rise to a relatively new body of literature on organizational learning and effectiveness. The common element in this literature is the focus on continuous process improvement—or dynamic learning—and the treatment of the organizational infrastructure as the primary determinant of competitiveness and effectiveness.

The British army had immense difficulties moving from conceptions and theories of armored warfare toward an armored warfare doctrine. It had even more difficulties converting doctrine into tactical procedures. In 1938, the *Field Service Regulation* was the only official armywide operational guide not associated with a branch or regiment.²⁹ However, its contents were largely abstract rather than procedural. During the war, the notes from the theater of war provided more concrete assistance.³⁰ But, the notes, written as communiqués by regional commands, provided no armywide standard that could serve as a basis for

incremental improvements.

Behind this lack of armywide tactical procedures and standards was the British army's regimental system and decentralized nature. Of all the European powers, only the British assigned so many training responsibilities to the regiments and so few to the war department or army headquarters. The concentration of resources at the regiment level inhibited training at brigade and division levels. Responsibility for large-scale exercises was placed primarily on the major home and overseas commands, and no army-level exercise facilities were funded and equipped to routinely cope with such events. Exercises conducted on the Salisbury Plain—a tiny plot of land by US standards—were as close as the British came to a center for army tactics. But those exercises were held under the Home Command's auspices, which did not have the authority to establish tactical procedures for the entire force.

The British army's decentralized nature hampered the development of armywide tactical procedures and plagued the development of coherent fighting units. For example, the 7th Armoured Division—the “Desert Rats”—involved both in Operations *Crusader* and *Goodwood*, spent a total of two weeks during the war training as a single body, despite numerous breaks in its battlefield activity.³¹ Even after the fall of Tunis, when the division was sent to Homs for four months, no division- or brigade-level exercises were held. Generally, when the division was out of line, battalions were dispersed, each going to its own camp or regimental depot. In April 1941, when the division was sent to refit in Egypt, the 2d Rifle Battalion was stationed on the Suez Canal to watch for air-dropped mines, while the armored battalions were camped in the delta.³²

Of course, battle can be considered a form of training. Armies are frequently described as “battle hardened,” a phrase that suggests combat seasoning. But the British experience suggests that combat experience might not result in signifi-

cantly improved operational capabilities if combat lessons are not systematically distilled and used as the basis for improved training. In June 1944, there were high expectations for what the Desert Rats might achieve in Europe, but their performance was worse than that of most other British armored units.³³

Among other problems the 7th Armoured Division experienced was a lack of continuity in subordinate-unit composition. The regimental system was again largely to blame. The regiments protected their own turf, creating something of a union system. For example, the Royal Horse Artillery Regiment was responsible for providing the army with self-propelled artillery battalions. It protected this function, and other regiments, such as the Honourable and Ancient Artillery, could not be converted. As a result of this union system, any change in division tables of organization and equipment resulted in wholesale replacement of battalions instead of the conversion of battalions already assigned to the divisions.

Continuity also suffered when the regiments rotated battalions between the Home Command and various field commands. During the war, the number of battalions in the 7th Armoured Division went from 12 to 21 back down to 12. Eleven distinct brigades and 42 different battalions passed through the division as organic elements.³⁴ The resulting lack of division cohesion frequently resulted in scattered battalions during active operations. In emergencies, it was often easier to create scratch brigades out of battalions from different divisions than to reassemble the original divisions.

Frequent leadership changes above, below and at the division level further undermined unit cohesion and the ability of units and their leaders to learn together. During five-and-a-half years of war, the 7th Armoured Division had 10 commanders.³⁵ The situation at theater level was hardly better. British Middle East forces had three commanders in three years. Theater commanders

had great latitude in structuring or restructuring their forces. Perhaps more important, the lack of armywide doctrine standards meant each commander was likely to arrive in theater or at division-level headquarters with a radically different operational style than that of his predecessor. General Sir Archibald Wavell resurrected the 19th-century British light mobile desert column and conducted converging attacks with independently operating, corps-size, all-arms units. Field Marshal Sir Claude Auchinleck favored bold sweeping attacks by massed armored forces. Field Marshal Sir Bernard Montgomery preferred to lay siege to enemy front lines, frequently saying he was “crumbling” the enemy front. For the 7th Armoured Division, like all divisions in the British army, frequent changes in command meant frequently learning a new way of war.

The US Army, building on an existing training and doctrine system, developed an elaborate infrastructure that permitted the development, codification and continual evaluation of new doctrine and tactics. The outstanding feature of the US system was its treatment of both unit training and the development of tactics and doctrine as inseparable elements. This seamless system contributed directly and indirectly to US military performance. The US training system produced units that were well versed in existing doctrine and capable of performing to known and relatively uniform standards. The existence of a uniform standard facilitated the further development and improvement of tactics and procedures by ensuring that lessons learned from one unit were likely to apply to other units as well.

Virtually all of the training and doctrine system elements had some precedent, but General Lesley McNair formalized the full wartime system by using a program to develop, disseminate, test and modify US Army doctrine. The first part of this program involved conducting and evaluating maneuvers. Large-scale, relatively ad hoc exercises were

conducted. VIII Corps, formed in January 1941, conducted two corps-level exercises and participated in one multiarmy-level exercise within the first nine months of its existence. The second exercise involved close to 500,000 men and 1,000 aircraft operating across a “battlefield” that stretched along the Louisiana-Texas border.³⁶ Key participants studied exercise results in detail and prepared reports for McNair and his staff. The process helped the army community identify which tactics worked and which did not. The Desert Training Center, for a time under the direction of General George S. Patton Jr., was established for the continued refinement of tactical and operational procedures.³⁷

The second part of the McNair’s program involved inspection tours by key staff members from the various branches to units at the front. In addition to ensuring that doctrine was being followed at the front, specialists evaluated the effectiveness of existing doctrine and collected feedback from practitioners about how it might be improved. The reports “helped to link together divisions fighting overseas with the War Department, the army’s school system and units training for overseas deployment.”³⁸ The third part of McNair’s program was a series of lectures, discussions and demonstrations designed primarily to explain the full range of unit types and capabilities.

A key precondition for doctrinal evolution was the rigorous training and testing of units at all levels in the procedures associated with existing doctrine. Under McNair’s system, all new divisions entered a “training cycle” of 44 weeks before combat deployment.³⁹ The cycle was divided into three phases, each culminating in a rigorous evaluation of proficiency at platoon, battalion and division levels. Even after deployment, operational standards required that, when possible, a division’s training cycle replicate in miniature the division’s original training schedule. For example, after its drubbing at

Kasserine Pass and the subsequent fall of Tunis, the 1st Armored Division settled in for a summer of training. While the British 7th Armoured Division rested and refitted at Homs in regimental cantonments, the US 1st Armored Division conducted “large-scale, day-night exercises” near Oran.⁴⁰

In the US Army, channels of communication were redundant, sophisticated and frequently exercised. In the British army, channels were diffuse, informal and did not facilitate the systematic, armywide development and testing of tactical procedures. Neither British units nor British commanders could make the kinds of steady incremental improvements that characterized tactical adaptation and learning in the US Army.

A hands-on, interactive approach to learning, including the use of carefully constructed and systematically evaluated maneuvers, is necessary to convert theories of war into practical doctrines and procedures for the conduct of war. Theories of war establish the logical connections between technological and social developments and military possibilities. But military theories alone cannot deliver victory on the battlefield. The British were rich in theory but poor in practice. To have an impact on the battlefield, theories must be translated into doctrine or sets of procedures for accomplishing specific battlefield tasks. Effective doctrine can only be developed through the practice and evaluation of proposed procedures under simulated battlefield conditions.

Innovation and learning can be described in terms of continuous process improvement. The primary determinant of success or failure in achieving such continuous improvement is the strength of the infrastructure that binds the organization. A highly developed infrastructure is essential. For an organization to learn, its members must share a common language that derived from doctrine that is practiced throughout the force. Rigorous unit-level training

and evaluation produces leaders of high and, perhaps more important, relatively uniform quality. Based on these observations derived from the British and US armies in World War II, priority should be given first to the learning system itself, and only then to specific questions of doctrine, organization and equipment. *MR*

NOTES

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MR Review Essay

Stalin's Dangerous Game

by Bruce W. Menning

At 0330 on 22 June 1941, world war came to Russia for the second time in the 20th century. Three decades earlier, Czar Nicholas II's armies had gone forewarned into the offensive. This time Stalin's armies were caught by surprise and on the defensive.

Soviet troops on the frontier were at little more than peacetime strength. With timing and experience on their side, three German army groups tore their way with stunning rapidity through Russian air and ground defenses. In little more than a week, the *Wehrmacht's* momentum carried the banners of fascism deep into Soviet territory. By 3 July, even Chief of the German General Staff General Franz Halder, initially skeptical, wrote that the Russian Campaign had been

won in only two weeks. Until the Battle for Moscow six months later, the fate of Josef Stalin's Russia hung by the slender threads of frantic improvisation, untold sacrifice and desperate, defensive battle.

Why So Unprepared?

Why was the Red Army so unprepared for Hitler's invasion? Some blame failure on the historical "malady"—Russia's curse to do poorly at the outset of all conflicts. Others blame native military incompetence magnified by German perfidy and martial skill. Still others blame Stalin's inept statecraft and his naivete for trusting Adolf Hitler while distrusting his own intelligence reports about war's imminence, which originated with the very security and

intelligence organs he had recently and ruthlessly purged. Also, when war did come, the burden of troop leadership fell on the shoulders of an officer corps seriously impaired by the same purges. It was as if Stalin were out to prove the adage that "most wounds are self-inflicted."

Subsequently, and not surprisingly, during Stalin's own lifetime, the initial period of the "Great Patriotic War" (the Russian term for World War II on the Eastern Front) was a black hole from which little historical light radiated. The post-Stalin period gave rise to occasional glimmers, but regard for the communist legacy and the reputations of Stalin's inheritors, who owed their rise and careers to preparation for and conduct of the war, precluded

more than a few stray flickers of light.

After 1956, Stalin gradually emerged as scapegoat, but criticisms were often elliptical and superficial. To transcend formulaic indictments associated with “the cult of personality,” one had either to read—mostly in vain—between the lines or turn to the best western commentators, especially the dense, magisterial writings of British historian John Erickson.¹ Failing everything else, one could turn with less assurance to German writings of “the devil’s disciples” for partisan explanations of why Hitler’s generals initially did so well in order, ultimately, to fail so spectacularly.

These circumstances held true until the last years of Russian President Mikhail Gorbachev’s regime, when “openness” and a thirst for “filling in the blank spots” created a more positive atmosphere for pursuit of historical truth, including what occurred in 1941. For a brief period during the early 1990s, a few daring pioneers, such as Colonel General Dmitri Volkogonov, succeeded in prying open archival doors, only to have them slammed shut by the forces of political uncertainty and resurgent conservatism. Meanwhile, the darkness was lit by a few feeble rays emanating intermittently from the Kremlin’s Presidential Archive and various military archives.

By Dim Candlelight

By this time Viktor Suvorov and Gabriel Gorodetsky had already begun lighting a few candles of their own. Suvorov is the pseudonym of the well-known Soviet defector Miron Rezun, who “earned his spurs” in the West as a former insider writing about the inner workings of the Soviet Army. As the Cold War waned, Suvorov shifted his literary barrage from present dying enemies to past dead enemies, finally zeroing in on Stalin’s role in allegedly precipitating Hitler’s invasion of Russia.

In his book, *Ice-breaker: Who Started the Second World War*, Suvorov argues—on scant evidence—that in 1941 Stalin was actually preparing a preemptive strike

against Germany.² Consequently, Germany’s Operation *Barbarossa* could be justified as merely a preemption of the potential preemptor. In Suvorov’s altered perspective, Hitler’s turn to the east might be viewed as a preventive war—an anti-Bolshevik crusade that would presage the subsequent Cold War’s containment and roll-back policies.

In one deft move, Suvorov flung open the door to the pure light of ideologically inspired speculation. Those who for any reason—and the reasons were often real enough—found something to dislike in the old Soviet regime basked in the bright light of a seemingly higher truth. Never mind that the preemption argument was as old as Hermann Goebbels’ German propaganda machine, and never mind that it stretched the facts beyond any correspondence with historical reality.

Suvorov’s work won an immense and sympathetic audience of a people long fed up with authoritarianism who were willing to believe the worst about their political forbears, especially Stalin. Russian authorities soon found themselves grudgingly reopening selected archives to revisit 1941 and counter Suvorov’s bold run to daylight. Wittingly or unwittingly, he performed his most important service for historiography by prompting a limited reopening of Russian archives.

One of the scholars who benefited immensely from newly accessible materials is Israeli historian Gabriel Gorodetsky, Director of the Curiel Center for International Affairs at Tel Aviv University. Trained as a Russian diplomatic historian, Gorodetsky was deeply troubled by the widespread acceptance of Suvorov’s contentions. From the mid- to late-1980s, he began a personal quest to set the record straight. Gorodetsky’s book, *Grand Delusion: Stalin and the German Invasion of Russia*, is the product of painstaking archival research in Russia and elsewhere.³ Not since the publication of John Erickson’s books has any single work done so much to improve understanding of what went wrong for the Soviets in 1941.⁴

Stalin’s Role

Gorodetsky marshals new materials and fresh perspective in his quest to clarify Stalin’s actions during the year before Hitler’s invasion. The portrait that emerges is more complex and nuanced than previous studies paint. It depicts a coldly calculating Stalin, who, when confronted with the revolutionary implications inherent in Hitler’s version of a new European order, felt impelled by traditional Russian interests to redress the imbalance and address the international humiliations Russia had suffered since the end of the Crimean War in 1856. These interests, when translated into objectives, included acquiring a buffer zone for the western frontier, pursuing guarantees against possible incursion, expanding influence in the Balkans and retaining access to the Turkish straits, while denying the latter to potential adversaries.

In Gorodetsky’s view, Stalin was neither the ideologue Suvorov depicts nor the ham-handed bungler British Prime Minister Winston Churchill remembered. Gorodetsky sees him as a single-minded practitioner of *realpolitik*. Of course, the difficulty was that Stalin’s various ventures brought him into conflict not only with Germany but also with Great Britain, whose interests in the Mediterranean had long barred the door to Russian and Soviet expansion.

Distrust of Great Britain complicated Soviet foreign and security policy and initially prevented Stalin from finding common cause with the British against Hitler. Gorodetsky ably and even brilliantly demonstrates how, through everything, Stalin’s policies looked not only to the west and sometimes to the east, but also to the southwest and the straits.

This complex mosaic depicts Stalin’s reincarnated version of the “Great Game,” the term usually applied to the 19th-century Anglo-Russian rivalry for hegemony in central and south Asia. Stalin’s cards were chiefly political and diplomatic. He played them ruthlessly and with

some skill, as demonstrated by his nonaggression pact with Hitler; the outcome of the Finnish war; and the annexation of eastern Poland, the Baltic republics and Bessarabia. Yet Stalin's play also uncovered his weak suit, the Red Army, which left the Soviet Union vulnerable to military trump.

Gorodetsky is at his best as he weaves his way through the tangle of Balkan politics and perceptions. After failing to keep the Germans out of Romania, Stalin played for time and influence in Bulgaria only to have the Germans execute an end run into Greece, which naturally led to Bulgaria's capitulation to the Axis.

Bit Players

From these and other complex cross currents flow both a sense of the rational and traditional in Stalin's policy and an understanding of various participants, including ministers, ambassadors, soldiers, intelligence operatives and the occasional bit player. Thus, in the days before instantaneous communications, Gorodetsky shows how the British emissary to Moscow, the former leftist Sir Stafford Cripps, and his old-school German counterpart, Count Werner von Schulenburg, left their own imprint on the period's policies and perceptions. Both were prophets, but only one was ordained to play Cassandra.

Cripps believed Stalin was indispensable to any full-blown anti-Hitler crusade that might enable Great Britain to survive epic conflict. Schulenburg felt Germany had little to gain and much to lose from war with the Soviet Union. Gorodetsky also demonstrates how Stalin and his inner circle reacted to intelligence reports. They were men whose innate suspicions made them distrust not only the British—who were trying to drag the Soviet Union into the war—but also the often inexperienced and sometimes inept operatives plying their dangerous trade in occupied and unoccupied Europe. Indeed, the review of intelligence at Stalin's and the Soviet High Command's disposal is more detailed and comprehensive than that offered by any account available to date.

Varying conclusions drawn from

intelligence sources highlight differences between Stalin and his military officers. Gorodetsky scores a major contribution in describing this relationship. After the Red Army's initial failures in Finland, and after shortcomings displayed in occupying newly annexed territories, Stalin treated even his best generals with a mixture of contempt, suspicion and distrust.

In a country where it was axiomatic that "the Party and Army were one," Stalin presided over—even ordained—a civil-military split at the upper reaches of his political-military establishment. Fear, and the occasional execution, sapped the high command's confidence and stifled initiative. Worse, Stalin never made the high command privy to his game, although the defense commissariat and the general staff were regular recipients of reports from military intelligence that reflected increasingly ominous *Wehrmacht* deployments opposite the Soviet frontier. Consequently, except for Stalin's occasional direct intervention, the high command was ignorant of the larger policy picture. They were condemned to formulate their plans in dangerous semi-isolation from Stalin's inner circle.

A Desperate Game

During the first half of 1941, Defense Commissar Semyon Konstantinovich Timoshenko and General Staff Chief Georgi Konstantinovich Zhukov grew increasingly apprehensive over the German military threat. They proposed—sometimes timidly, sometimes boldly—various measures to enhance Soviet defenses. Stalin rejected the strongest of these measures, which included a plan for preemptive war although he did permit a partial covert troop mobilization during spring 1941. This mobilization eventually raised Red Army manning to about two-thirds of its wartime level—strategic depth that caught Hitler's generals by surprise. They had expected to break into the clear after the first few weeks of conflict.

Stalin would go no further. He understood the weakness of his military and resolutely avoided the slightest provocation to the Ger-

mans. As intelligence indicators of impending war became clearer, Timoshenko and Zhukov proposed additional measures that would raise frontier defenses to full readiness and permit forward commanders greater latitude in implementing and devising additional defensive measures. Stalin emphatically rejected these initiatives, silencing and humiliating Zhukov, simply bludgeoning Timoshenko and leaving the Red Army unprepared for an invasion.

By opting for a partial defense in depth, but not permitting readiness higher levels within forward defensive elements, Stalin burdened his commanders with an unresolvable dilemma. Their defensive deployments conferred a measure of deep insurance but left forward defenses utterly vulnerable. Meanwhile, even after Yugoslavia's catastrophic fall, Stalin relied increasingly on diplomacy as his primary instrument for averting war.

Gorodetsky portrays Stalin as a rational actor playing an increasingly desperate game, knowing full well that the Red Army was not his strong suit, but nonetheless skillfully playing the remainder of his cards to buy time, protect Russia's interests and possibly fashion a stronger position. The issue was whether the game would run long enough to change the fundamental calculus or generate other factors, such as a stronger Soviet military that might challenge Hitler's dominant position. Unfortunately, on 22 June, the game was up. Hitler unleashed the *Wehrmacht* to trump all bids.

A Tale Well Told

Gorodetsky persuasively relates all these developments, skillfully drawing together the diverse diplomatic, military and political threads of a complex narrative, all the while making extensive use of rare and previously unavailable archival materials. If, in the midst of this splendid achievement, it is possible to quibble over varying emphases and perspectives, then Gorodetsky's analysis suggests several areas worthy of further examination.

One such area derives from Gorodetsky's fixation on events in the

Balkans, which is at first a strength, but which gradually eclipses a fuller understanding of strategic developments on the increasingly important central, or east-west, axis. Once the Germans began to concentrate main forces in occupied Poland, the Balkan direction gradually lost importance.

As the situation on the western frontier grew increasingly critical, Stalin personally intervened in the military planning process to strengthen defensive dispositions within the Kiev Special Military District. Early on, as Gorodetsky asserts, he might have done this to retain the possibility of invading Romania, but by late 1940 the primary intent was to protect the breadbasket of the Ukraine and the routes to the Caucasian oil fields. The latter point Gorodetsky also concedes, along with the correct assertion that Stalin's intent was also to provide a springboard for a potential Soviet counteroffensive into the Polish plain once any initial German incursion had lost momentum. However, Gorodetsky clings too long to the possibility of an anti-Romanian mission for Kiev forces. By 1941, the opportunities were too fleeting and other threats too great.

Persistent fixation on the Balkan axis obscures what had become, by the late 1930s, a fundamental tenet of Soviet military strategy. Stalin's theoretical understanding of possible future war owed much of its sophistication to the assertions and writings of Boris Mikhailovich Shaposhnikov, the first Chief of the Soviet General Staff. It was Shaposhnikov's conviction that any major conflict between bolshevism and fascism would likely become systemic and protracted. If this were the case, then the logical conclusion for Stalin was that the only way Hitler could win such a war would be first to gain control of Soviet grain and oil-producing regions, then proceed with a full-blown assault on Moscow in the center. Consequently, Stalin's emphasis on strengthening defenses in Ukraine was eminently sensible, an understanding that reinforces Gorodetsky's assertions about Stalin as a rational actor, but a

strategic understanding that Gorodetsky never makes clear.

The irony inherent in Stalin's Ukrainian emphasis was the mistaken assumption that his adversary possessed the same degree of rationality. The immediate military reality was that the emphasis on Kiev left the Red Army—on the eve of war—at a distinct disadvantage along the axis north of the Pripet Marshes. This became the very sector of the main effort for Hitler's Army Group Center.

Another issue Gorodetsky does not press home is Stalin's perspective on what circumstances he might confront should war actually break out. In retrospect, the Finnish war seems to have instilled in him a sense of the steep political costs exacted against an aggressor. Suvorov's arguments notwithstanding, Stalin repeatedly and emphatically discarded the notion of preemptive war, no matter what his generals proposed. In retrospect, it is clear that Stalin had read Shaposhnikov's book, *The Brain of the Army*, which depicts the growing powerlessness of Nicholas II in 1914 as last-minute peacemaking efforts lost ground to the iron military laws of mobilization and transit timetables and troop-deployment schedules.⁵

Shaposhnikov studied the process and concluded that preparation for and conduct of future war should lie primarily in the province of "an integrated great captain," the chief of a modern general staff. While this conclusion was probably true, Stalin put his own spin on it by demonstrating that the dictator himself intended to act as Russia's version of this august personage. Ever the astute observer and Machiavellian practitioner of power politics, Stalin refused to cede requisite authority to the military, electing instead to retain complete control of the entire political-military flow to possible war.

Gorodetsky makes it clear that Stalin apparently never believed the situation would come to war. What is less evident is that Stalin—again the rationalist—felt he understood Hitler's road map to war. He foresaw a period of escalating tensions and political conflict followed by threat-

ening military deployments and posturing after which a deal could be struck at the last possible moment. Indeed, a recently published addendum to Zhukov's memoirs asserts that as late as the fall of 1941 Stalin still expected to find accommodation with Hitler.⁶ And, if Stalin's great game failed, the strategic-operational war game of January 1941 had demonstrated that the Red Army could withstand—although with considerable losses—an initial German offensive, then deliver a suitable riposte. Under these circumstances it is probably no exaggeration of the historical record to conclude that Stalin might rationally have elected to receive the first blow, in which case Suvorov's argument is completely eviscerated.

Whatever the actual complexities, it is worth noting that one week after the Nazi invasion, Stalin was leaving the halls of the Defense Commissariat in the company of his usual confidants. Clearly showing signs of strain, the dictator loudly blurted out to no one in particular that Lenin's heirs had squandered a great inheritance.⁷ More accurately, by summer 1941, the national calamity was owed to Stalin's own dangerous game. **MR**

NOTES

1. Among others, John Erickson's publications include *The Road to Berlin: Continuing the History of Stalin's War with Germany* (Boulder, CO: Westview Press, 1983); *The Soviet Military, Soviet Policy and Soviet Politics* (Washington, DC: US Strategic Institute, 1973); *Soviet Military Power and Performance* (Hamden, CT: Archon Books, 1979).

2. Viktor Suvorov (Miron Rezun), *Ice-breaker: How Started the Second World War?* (London: Hamish Hamilton, 1990).

3. Gabriel Gorodetsky, *Grand Delusion: Stalin and the German Invasion of Russia* (New Haven, CT: Yale University Press, 1999).

4. Erickson.

5. Boris Mikhailovich Shaposhnikov, *Mozyg armii [The Brain of the Army]* (no publication information available).

6. Georgi K. Zhukov, *The Memoirs of Marshal Zhukov* (New York: Delacorte Press, 1971).

7. Dmitri Volkogonov, *Autopsy for an Empire: The Seven Leaders Who Built the Soviet Regime* (New York: Free Press, 1998).

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A Homeland Defense Mission

by Major Kevin Stringer, US Army Reserve

With the rise of transnational security threats such as terrorism, weapons of mass destruction (WMD), international crime, drug trafficking and illegal immigration, the comprehensive defense of the Continental United States (CONUS) takes on increasing importance. The constant possibility of environmental disasters, both man-made and natural, also emphasizes domestic security issues. The term “national defense” resumes its true meaning and focuses on protecting core US values—those political, economic, social and cultural interests and activities that represent our nation.

The US homeland’s distance from potential adversaries has long protected its core interests and activities, which form the center of gravity for US security. This luxury no longer exists because of global security threats since the Cold War’s end that can target and reach the US mainland. This potential danger requires the military to prepare to defend the US homeland from a multitude of unconventional threats.

Given this security situation, homeland defense (HLD) is high-priority for the United States. Because the United States has a dominant position in the Western Hemisphere and no conventional military threat on its borders, the HLD mission generally excludes the combat role and instead encompasses several nontraditional activities that fall under the aegis of military operations other than war (MOOTW). Because the Department of the Defense (DOD) and individual services have not officially defined the missions with this function, MOOTW activities mentioned in this article are a small indication of missions required to support HLD. The final product may be much more comprehensive

as this concept evolves over the next few years but will generally exclude conventional warfighting activities. Given these parameters and considering the land power nature of this HLD mission, the main responsibility for its execution will fall on the US Army, in particular the US Army National Guard (ARNG).

Although DOD has not pinpointed HLD responsibility, the assumption that the ARNG will play a lead role is based on its presence in all states and territories, its historical involvement in MOOTW missions within CONUS and its constitutional obligations to maintain the security and well being of each state. Currently, domestic support for MOOTW missions constitutes the majority of ARNG requirements.¹

Although the US Army Reserve (USAR) may play a role in HLD, its involvement will be diminished by the following:

- Its combat support (CS) or combat service support (CSS) functions for the active force.
- Its increasing overseas deployment cycle to Bosnia- and Kosovo-like support missions.
- Its overall integration into Active Component (AC) missions.

Unfortunately, this environment does not bode well for the ARNG’s continued ability to maintain its training readiness for the combat role in today’s force structure. Rather, there is a distinct danger that a focus on HLD would degrade the ARNG’s ability to perform in combat. This possible loss of warfighting readiness stems from three things:

- The nontraditional nature of the HLD mission and the ARNG’s unique suitability for this task.
- Spending limited and valuable training time on nontraditional missions rather than combat training

missions stressing unit-level combined arms proficiency.

- Building habitual planning and staff relationships with civilian and law-enforcement agencies (LEAs) rather than AC combat formations.

Solving this predicament means restructuring Army Reserve Components (RC) to place the bulk of reserve combat formations in the USAR and reserve CS and CSS units in the ARNG.² This reorganization would align ARNG unit functionalities with their most common and likely mission requirements while serving under either state or federal control for the HLD role.

Classifying MOOTW Activities

In analyzing the HLD mission, US Army Field Manual (FM) 100-5, *Operations*, provides a framework for classifying MOOTW activities and a guide for identifying those that pertain to HLD.³ Of the 13 activities listed for MOOTW, four generally apply to homeland defense. These four are not necessarily distinct and may overlap in a domestic context. Furthermore, the ARNG has played a strong and valuable role in all four areas under both state and federal control.

Support to domestic civil authorities during domestic emergencies helps suppress violence or insurrection. These activities also include border-control operations directed against illegal immigration. Under the provisions of *The Posse Comitatus Act*, neither the AC nor the USAR may replace duly appointed LEAs.⁴ Although Congress has slightly modified the law for these two components, the *Act* is less restrictive for the nonfederalized ARNG under Title 32 of the *US Code (USC)*.⁵ The ARNG is a natural candidate for

such missions and has historically performed them either in a state or federal status. In 1996, for example, 46 states and territories called on the ARNG for a record 460 state emergency call-ups to support domestic civil authorities.⁶ A more specific example of this activity and ARNG participation occurred during the 1992 Los Angeles Riots when the California National Guard (CNG) was called to restore civil order following the Rodney King trial. Three heavy CNG brigades were alerted for this operation.⁷

Humanitarian assistance and disaster relief involves supporting domestic agencies to promote human welfare, reduce pain and suffering and prevent the loss of life or destruction of property in the aftermath of natural or man-made disasters. The Army provides logistic, medical and manpower support for these operations. Again, the ARNG is ideally suited for these since it usually has indigenous units located in the affected region. Examples of ARNG participation include domestic emergency support in the aftermath of various California earthquakes in the 1990s, Hurricanes Andrew and Iniki in 1992 and the Midwest floods of 1993.

Support to counterdrug operations primarily concentrates on supporting LEAs and the counterdrug efforts of other federal departments to interdict the flow of illegal drugs. Support for domestic counterdrug operations includes military planning and training assistance to domestic LEAs, equipment loans and transfers and other assistance as requested or authorized. Given its Title 32, *USC*, status and its resources, the ARNG often participates in such operations.⁸ This activity is mandated by federal law for the ARNG and authorized by the Secretary of Defense.⁹

Arms control activity goes beyond the traditional Cold War task of promoting strategic military stability by monitoring the proliferation of weapons and technology and verifying arms control agreements. For the HLD mission, this area now covers detecting and preventing WMD

usage on US soil, preparing US citizens for chemical and biological attacks and responding militarily to such assaults.

Training on Tasks

All these activities require training on tasks outside the collective combined arms focus for successful combat. Also, these activities require stress-intensive cooperation and integration with federal and state LEAs, other federal organizations such as the Federal Emergency Management Agency and some nongovernment organizations such as the American Red Cross.

Given that the ARNG is already heavily involved in HLD activities, it has developed strong and habitual links with civilian agencies rather than the Active Component. These linkages come as a detriment to ARNG combat formations executing these tasks. Recent examples of ARNG involvement in domestic MOOTW activities for homeland defense confirm a shift toward nontraditional missions and more interagency cooperation with nonmilitary federal and state organizations.

The CNG

On the West Coast, the CNG participates in a host of counterdrug operations on the US-Mexico border. These programs range from border reconnaissance and observation to engineer support. As in other states, the CNG's counterdrug program tailors support activities to meet LEA requests. National counterdrug programs fund the mission.

Work performed by the ARNG is designed to free up more law-enforcement officers for drug interdiction duty or investigations. In performing these tasks, the CNG is involved in two HLD activities—support to domestic civil authorities and support to counterdrug operations. In executing these missions, the CNG works extensively with the US Border Patrol, the Drug Enforcement Agency and the Immigration and Naturalization Service. These interagency operations require extensive adaptation, liaison and integration with civilian LEAs. Although

military skills are used, methods, training and doctrine differ vastly from those required for conventional warfighting.

Units and individuals are not focusing on collective combat training during the precious training days used for these missions. Naturally, an AC unit would suffer degraded collective combat skills when performing such missions, but it would be able to recover this lost proficiency because its full-time status allows more time for refresher training. Given that most ARNG units only have 39 training days per year, any ARNG combat formation participating in such nontraditional operations faces a daunting training deficit in combined arms proficiency.

The cumulative effect of numerous, consecutive HLD missions would be almost impossible to overcome, given the ARNG's part-time status. Further, allocating additional training days to close gaps would strain employer support for drilling employees.

The PRNG

The Puerto Rico National Guard (PRNG) has concentrated on the HLD mission by fighting drug-related crime on the island and providing humanitarian relief to the communities affected by the drug trade. The PRNG concentrates on support to domestic civil authorities, counterdrug operations and humanitarian assistance. During Operation *Centurion* in 1996, PRNG units and the police moved into 76 housing projects to arrest dealers and criminals and restore community order. Puerto Rico Governor Pedro Rossello created the program to reinforce limited Puerto Rico LEA assets and drive out drug traffickers from housing areas. The secondary objective was to restore normalcy to communities through a coordinated security and social effort. Soldiers from aviation and military police units supported the police in the initial cordon, search, seizure and arrest phase. Once the target area was cleared of identifiable criminal elements, infantry, artillery, engineer and maintenance personnel helped

community agencies rebuild housing complexes, distribute antidrug literature, rehabilitate facilities and dispose of garbage.

The program was a resounding success, and the PRNG's skills and resources were paramount. Unfortunately, in terms of active force integration, this wealth of operational experience was misdirected. The PRNG applied and exercised MOOTW doctrine, not conventional war-fighting practices. They used valuable training days that could have been used for collective combat training. They also built close cooperation, reinforced habitual relationships and integrated with police and various social agencies—not with AC combat forces.

The Californian and Puerto Rican examples illustrate the debilitating readiness effects of ARNG combat units' participation in HLD missions. They reflect a trend the US Domestic Preparedness Program reinforces—emergency providers from US cities receive training on how to respond to an attack involving WMD elements. The ARNG contributes substantial training and support to this DOD-directed program. Participation is the result of the 1996 *Congressional Defense Against Weapons of Mass Destruction Act*, which made DOD the lead agency for WMD-consequence management.¹⁰

Unfortunately, this DOD policy creates the possibility of having ARNG combat units focus on a domestic mission, which detracts from warfighting readiness. Further, this program requires the ARNG to interact with agencies related to civil defense rather than the AC. Participating ARNG combat units do not emphasize battalion and brigade collective combat training—the basis for warfighting success. Rather, they focus on MOOTW training templates that differ doctrinally from conventional warfighting templates.

Nevertheless, the ARNG is better suited for HLD operations as state-directed organizations with fewer *Posse Comitatus* restrictions.¹¹ Further, ARNG members perform these

missions in their home states, where they identify and bond with the civilian populace. ARNG dominance in these operations, however, creates distance from the strategic combat reserve mission. This alienation from conventional warfare creates focus on a nontraditional HLD doctrine rather than on the accepted warfighting model.

Given the already limited number of annual collective training days for an ARNG combat unit, without substantial training, ARNG combat units' ability to fight alongside their AC brethren is threatened. The issue is not whether ARNG units can perform in the combat role. Rather, if ARNG combat units participate in more and more nontraditional domestic missions within the HLD framework, their conventional combat training readiness will suffer, and the wrong habitual staff and planning relationships will form.

A Possible Fix

The United States must be prepared to defend its homeland from a variety of nontraditional threats. The ARNG provides an excellent and natural instrument for confronting these threats. However, this approach dangerously diverts the ARNG from its combat mission. One way of resolving this issue would be to place all ARNG combat formations into the USAR. This practical change would logically align the nation's primary strategic combat reserves with their AC partners, eliminate dual control over these combat formations and allow the active Army to direct training and combat readiness without subordination to state control.

Conversely, all CS and CSS units could then be integrated into the ARNG and focus on the HLD role, which more closely mirrors the types of crises and emergencies faced by individual state governors. In effect, the ARNG would return to its territorial or constabulary nature, which in fact more closely approximates the legacy of the ARNG's militia history and tradition.

Although this concept is politically contentious, it is not new. In

1948, a DOD-designated board headed by Assistant Secretary of the Army Gordon Gray proposed an even more radical change to improve the US national security: merge the entire ARNG into the federal reserve to overcome the problems of dual control and influence on readiness.¹² Given the ARNG's high value for homeland defense, I do not advocate such an extreme measure, but commonsense defense based on training issues argues for placing reserve combat forces in the USAR. It makes sense for the states because, "prestige considerations aside, state governors have a greater need for transportation, military police, medical, engineer and helicopter units than they do tank and infantry battalions."¹³

Support units are exactly what the HLD mission requires. Further, these are the types of units that states can readily fill since "the transfer of skills from the civilian community to the military is very high for support functions, but virtually nonexistent for maneuver combat units."¹⁴ This fact creates synergies in terms of ARNG recruitment and force composition, since many of these civilian-acquired support skills directly contribute to the HLD mission. The result is win-win as the states gain the capabilities they need, and "without the peacetime phenomenon of dual chains of command, the active Army can influence the combat training and readiness in the USAR to a much greater degree than in the ARNG."¹⁵

Opponents of this initiative will cite the recent activation of the AC/RC division, in which three ARNG enhanced-readiness brigades fall under an active-duty division headquarters, as an example of improving the combat readiness of ARNG combat formations. Although this step is in the right direction, it does not go far enough, since those units still remain under the state governor's statutory control until federalized. If they are used for HLD missions, valuable annual training days are lost with the resultant impact on unit combat readiness. The politically difficult decision to place all combat as-

sets in the USAR could alleviate this issue and open the way for a more efficient citizen-soldier force. *MR*

NOTES

1. Written comment to first draft of this article from an official of the National Guard Bureau, 1999.
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3. US Army Field Manual (FM) 100-5, *Operations* (Washington, DC: US Government Printing Office, date unknown).
4. Title 18, *US Code, Section 1385, The Posse Comitatus Act*.

5. Title 32, *US Code, Section 102, National Guard*, 05 January 1999.
6. MG William A. Navas Jr., "The Army National Guard: Flexible, Accessible Force," *ARMY 1996-1997 Green Book* (October 1996), 92.
7. Bruce R. Pirnie and Corazon M. Francisco, *Assessing Requirements for Peacekeeping, Humanitarian Assistance, and Disaster Relief* (Santa Monica, CA: RAND, 1998), 9 and 10.
8. Title 32.
9. Public Law 101-189, *National Defense Authorization Act for Fiscal Year 1990 and Fiscal Year 1991*, Title XXII, 29 November 1989.
10. *Congressional Defense Against Weapons of Mass Destruction Act, 1996*.
11. Title 10, *US Code, Armed Forces*, Subtitle A, *General Military Law*, Chapter 13, *Militia*, 05 January 1999.
12. *Uniform Code of Military Justice*, 7 February 1949.
13. Code enacted into law 5 May 1950 (64 Statute 107).

14. *Ibid.*
15. *Ibid.*

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Air Power: Closing the Last Sanctuary

by Lieutenant Colonel David R. Mets, US Air force, Retired

My personal experience—over 24 hours of flight time on days 1 to 3 of the ground war—was that I never saw a fixed-wing aircraft. I know there were some CAS [close air support] sorties flown, but I didn't see them. If they're not there, they're not providing CAS!

—Anonymous

In the article "What If It Works? Air Armament Technology for Deep Attack," which appeared in the December 1986 issue of *Military Review*, I expressed concern about the high-tech/low-tech debate central to then-current military thought.² The article questions whether the US military would be ready if available technology actually worked better than expected. I cite US historian Ernest R. May's idea that the US military is influenced by contemporary experiences to the neglect of history.³ The article offers as examples the mining of lines at Petersburg, Virginia, in 1864 and the gas attacks at Ypres, Belgium, in 1915, where technology worked well, surprising commanders but leaving them unprepared to exploit their successes.⁴

I was way off the mark with the conceptual framework that underlay the article—a war on the northern European plain against an enemy with an offensive doctrine and far greater numbers than we possessed. However, some points in the article might be worth revisiting.

Technology as Used in Iraq

Did available technology work in Operation *Desert Storm* in either the technical or tactical sense? Almost all articles concerning the war

against Iraq argue that the conflict was unique and, therefore, we cannot base lessons on it. Such articles then draw inferences that appear to be lessons. Granting that every war is unique, can we find anything from the experience that might help the professional soldier think about the future? Would the technology work next time? How can it improve to better fit the future? Could US soldiers' green spectacles skew their vision of the future?

"To use air power in penny packets is to disregard the importance of a menacing and even mysterious military reputation—the reputation of power is power," [English philosopher Thomas] Hobbes wrote, and that applies to military power as well as other kinds. The sprinkling of air strikes over an enemy will harden him without hurting him and deprive the United States of an intangible strategic asset: [S]tudents of air power will serve the country well by putting the Gulf War in a larger context, one in which the gloomy wisdom of [Union General William Tecumseh] Sherman tempers the brisk enthusiasm of those who see air power as a shining sword, effortlessly wielded, that can create and preserve a just and peaceful world order."⁵

A Dilemma of Sorts

Operation *Desert Storm* unleashed a tempest of words about packaging and employing air power—words of praise and critique, bravado and defensiveness. Did these words arise from the standard bureaucratic dread of diminished turf or budget? Did

they arise from military personalities who believed their share of glory was insufficient? Did they arise from the rediscovery that antiestablishment arguments—especially nasty ones—smooth the road to fame in journalism or tenure in academia? Or could some have arisen from solid inductive reasoning based on valid empirical combat data and a patriotic concern for national security and humanity?⁶

This is a problem for Solomon. The Cold War is over, but no one knows what will replace the stable bipolarity we have known. Many authors argue that the day of conventional, interstate war is gone. The war to end all wars has finally been won. But, is that so? Official national strategy acknowledges that a war against ex-Warsaw Pact powers on the Northern European plain is improbable but posits that the future holds possible regional, conventional wars similar to *Desert Storm*. Yet, some writers argue that regional adversaries will be much too clever to play to our strong suit. Rather, they will choose other forms of conflict, such as guerrilla war.⁷

Has the common assumption that the United States will not tolerate casualties proved valid? Does that mean we cannot engage any adversaries smarter or stronger than Saddam Hussein? Was Iraq such a house of cards that any strategy or any technology could have brought it down? Or does the Gulf War offer evidence that technology can sometimes help achieve national political objectives through organized violence and low casualties?⁸

The Possible Solution

Desert Storm literature generally considers the Gulf War unique—and shorter than we should expect next time. Declared objectives were met. Allied casualties were blessedly low, and the land campaign was short and inexpensive in lives. No one questions that the environment was especially favorable to air power. No one doubts that air superiority was one-sided. Almost no Allied aircraft were lost, while the Iraqi Air Force lost over 30 planes to air-to-air missiles.⁹ Nor is there much argument about some parts of the air-to-ground war. Precision-guided munitions (PGMs) were technically efficient, but there is some question as to whether they were as effective as enthusiasts assert. PGMs were far more accurate than unguided munitions even where they did not measure up to figures coming from the test range. Feedback has been a tough problem for military commanders since antiquity, and even modern bomb-damage assessments offer a limited view of an attack's effectiveness.¹⁰

Maverick missiles were used mainly in Kuwait and come in infrared, television (TV)- and laser-guided versions. But they are also expensive, and their warheads are much smaller than those in the bombs. Even high-tech air enthusiasts agree that to some degree bad weather diminished PGM effectiveness. Although the Iraqi Scuds were not much of a military threat, they were a serious political threat and finding them from the air was a tough problem.¹¹ In the technical sense, there is some consensus that the aerial weaponry worked well in the Gulf War.

At a higher level of analysis, agreement disappears. Many historians argue that *Desert Storm* was unique—and not only for our time. They believe it will probably be among the last conventional wars between traditional states.¹² As historians have not yet agreed on what started the American Civil War or World War I, we remain uncertain as to what ended the Gulf War—despite the firm opinions many writers express.¹³ One could marshal enough quotes to fill a small book about the

decisiveness of deep attack. Many other pundits claim the ground war, with its battlefield air support and its implied threat, made the difference or that the Iraqi house of cards was so fragile that anything would have worked.¹⁴ Joint force air component commander (JFACC) General Charles A. Horner, writes that the JFACC system and its associated air tasking order worked—that the long struggle for centralized command of tactical air power at the theater level was consummated. Others doubt it.¹⁵

Since the days of Dunkirk and Kasserine, ground forces have consistently complained that air forces have not provided adequate support. Usually, opposing ground commanders, such as German Field Marshall Eric Rommel, saw things differently.¹⁶ The air partisan would likely suppose that the Gulf War would not have been marred by such complaints. But clearly, those complaints are not dead.¹⁷ On the air side of things, at least implied, is that the ground war against Iraq was a cake walk thanks to air power—notwithstanding the uncertainty over its decisive role.¹⁸ The high-tech air-power enthusiast would argue that modern radar and infrared targeting systems, such as the airborne warning and control system and the joint surveillance target attack radar system, denied the opposition the sanctuary of darkness, which had been a boon in North Korea and North Vietnam. The skeptic would argue that any competent opponent would pay any price to take out such systems. Also, even in the Gulf, where the climate is more benign than in either Korea or Vietnam, weather conditions nonetheless inhibited PGM effectiveness.¹⁹

Perhaps the most important disagreement on what we can learn from *Desert Storm* has to do with the cost-effectiveness of high-tech approaches. Air-power partisans favoring PGMs and other sophisticated technologies generally assert that huge leverage and savings can be gleaned from stealth and the fewer munitions required for a given level of destruction. Partisans often assert that their low-tech opposites are penny-wise and pound-foolish, put

too low a price on human life and mistakenly see precision munitions' high unit-cost as prohibitive for combat persistence, mass attack and peacetime training. Debate continues over whether dependence on high technology, especially in air power, will reduce the flexibility needed to cope with the fog of war.²⁰

Reducing Uncertainties

The fog of war can never be completely eliminated. However, new air-armorament technology might be able to reduce it and enhance the odds that future commanders' judgments can be correct—or less wrong than those of adversaries. The US Air Force has the lead in the Joint Direct Attack Munitions (JDAM) Program. The US Navy is leading the Joint Standoff Weapons (JSOW) Program. To some extent, both services will consolidate several different technology efforts that antedated the Gulf War and will only partially respond to some limitations suggested by that conflict.²¹

German Field Marshall Karl Rudolph Gerd von Rundstedt lamented that after the Normandy landings his troops had no sanctuary but the night. The chosen starting time for the Battle of the Bulge showed that the Germans knew that weather could protect them from Allied air power.²² Darkness also sheltered the North Koreans and Communist Chinese during the Korean War and the North Vietnamese during the Vietnam War. By the onset of *Desert Storm*, much had been done to remove the night blinders, but weather could still shelter an enemy to some degree.

JDAM. Currently, the JDAM effort seems to significantly reduce night's sanctuary and contribute to the savings gleaned through the use of new technology. Managed by the Air Force Materiel Command's Air Armament Center, the program will employ fairly mature guidance technology that promises radically improved accuracy of free-fall bombs delivered from medium altitude even from above cloud decks. The warheads for the first-phase weapon are the standard Mk-84 2,000-pound general-purpose bomb already in the

inventory. JDAM cannot duplicate the precision of laser-, TV- or infrared-terminal guidance systems.²³ The systems require at least some visibility, sometimes entail an uncomfortably close approach to the target or are fairly expensive.

In part, the JDAM program has grown out of the earlier inertial-aided munitions effort at Eglin Air Force Base, Florida. JDAM will use the standard bombs with strap-on kits consisting of an inertial measurement unit and a global positioning system (GPS) receiver for location updates. These units will lack the last increment of precision found in terminally guided systems, and will depend on good target intelligence, which will sometimes be unavailable and usually difficult and expensive to obtain. Nonetheless, if the program is successful, it will seriously erode the sanctuary bad weather now provides.²⁴

Terrain has always provided protection for the adversary. Potent new air-to-surface systems—soon to be enhanced with several new weapons—reduce the enemy's ability to find safety in hills and tunnels. However, rough terrain continues to hinder nonguerrilla surface forces; it slows them down, channelizes their movements and makes them more vulnerable to accurate air strikes from medium altitude.

Jungle terrain makes targets even harder to acquire from medium altitudes than does mountainous terrain. Overall, it remains a problem that new information technologies have not yet solved.²⁵ Still, the submunitions developed since Vietnam certainly would be much more effective today even in marginal weather conditions. In any event, from the air-power view, even the best terrain can be misused by surface defenders to forego what little protection is possible, as in *Desert Storm*.²⁶

The first phase of JDAM should deliver early an important and inexpensive improvement. The US Air Force has already ordered the weapon into low-rate initial production. *National Defense* reports that in 35 test drops JDAM hit within 8.2 and 12.2 meters of the aim point 97

percent of the time.²⁷ Subsequent versions were expected to yield the same precision as the current clear-air PGMs, reduce costs and enhance both flexibility and readiness. Initially, JDAM kits were to have cost about \$40,000, but by 1999 the cost was only \$18,000.

JDAM enables the adverse-weather use of standard inventory bombs. Later phases are expected to use a new, 500-pound bomb body to replace current Mk-82s. The new bomb can be shipped and stored in "all-up" condition—fully assembled, containing fuze, booster, filler, guidance and dual-purpose tail fin. This configuration will greatly enhance both economy and readiness, especially on aircraft carriers, by reducing the need for substantial ordnance assembly and maintenance personnel.²⁸

The inertial part of the guidance kit of the first-phase JDAM will yield a substantial improvement in accuracy even when it cannot receive GPS signals. Originally, the later phases were to have added an autonomous seeker that would have found the exact aim point once the inertial/GPS guidance had put the weapon into the general vicinity of the target. Not only would accuracy have been brought up to that of current terminal-guidance systems, it would have reduced intelligence requirements. The absolute coordinates of a tank would not be needed to launch a weapon at it. Several possibilities existed. Millimeter-wave, synthetic-aperture radar and laser-radar research efforts had long been underway, all having potential for adverse-weather operation.

True autonomous guidance also depends on reliable algorithms stored in small computers on the weapon itself. Since they must measure images coming from unpredictable angles at unpredictable distances against stored images, the computational requirements are huge. The process is complex and expensive, but reducing the number of wasted bombs and sorties is economical nonetheless. Testing revealed a 39-foot circular error probable (CEP), which is certainly sufficient for the majority of targets when using a

2,000-pound warhead. To keep expenses down, program directives dictate inertial/GPS kits to have a high degree of commonality with the Navy's JSOW.²⁹ Yet, as of today, no precision seeker is funded for the JDAM because of the considerable expense.

JSOW. The joint standoff weapon, which grew out of the Navy's former Advanced Interdiction Weapon System Program, envisions a 1,000-pound weapon for the F/A-18. The program will be implemented in phases from the relatively simple to the complex. Initially, the weapon will have guidance similar to that for JDAMs, but it will offer substantially greater standoff. One version to be procured in relatively small numbers will have an infrared seeker for precision attacks.³⁰

The JSOW's usual payload will be submunitions, the combat-proven combined-effects munition (CEM), with shaped charges for penetration, fragments for antipersonnel and zirconium for incendiary effects. Precision guidance is not required for such scatter weapons or for the Air Force's part of the program, which will integrate sensor-fuzed weapon submunitions with the JSOW airframe for antiarmor missions.

The Air Force's glide bomb, the GBU-15, has some standoff achieved with cruciform wings, but the JSOW has folding wings resembling those on conventional aircraft. This structure allows greater standoff, although initial versions of JSOW do not have propulsion. Propulsion is envisioned for later phases of the program, and integrated seekers will add even greater accuracy. The new weapon will replace the ROCKEYE, whose submunitions are less effective than CEM and which has to be launched closer to the target.

The JSOW has guidance arrangements that overcome some weather limitations and permit greater standoff and serves to replace some standoff missiles and bombs already in the inventory, at a lower cost. Other ongoing programs will help remove the weather sanctuary. For example, the low-altitude navigation and targeting infrared night system, still quite new in the operational Air

Force during *Desert Storm*, permits low-level flight under clouds at night.³¹

The Small Smart Bomb (SSB). The F-22 will achieve its stealthy quality in part from the internal carriage of its weapons, as does the B-2 and the Joint Strike Fighter. Both JDAMS and JSOW have many virtues, but stealth is not one of them. Both are too bulky to be considered for internal carriage. The SSB is currently under development to produce a weapon as destructive as standard 2,000-pound bombs, yet so small that three of them can be crammed into the same space as the Mk-84. This will come in part by improving the explosive filler and in part by making them much more accurate than earlier weapons. A given weapon's destructiveness varies directly with the explosive filler's weight, but inversely with the cube of the "miss distance." Thus, there might be more ground to gain in accuracy improvements.

If the program is successful, it will be possible to cram six SSBs into the bay of an F-117 where only two 2,000-pound bombs would fit. With just two Mk-84s, the F-117 was already the Gulf War's most deadly platform against point targets in heavily defended areas. Therefore, part of the gain would come from accuracy improvements and part from having more shots per sortie. If stealth holds up, aircrews will benefit from yet another accuracy factor by being able to deliver the weapon using greater deliberation than when being actively opposed by the defenses in a nonstealth aircraft. Also, it might be possible to use the SSB as a *Skeet*—sensor-fuzed weapons—submunitions in dispensers from nonstealth aircraft outside most defenses.³²

At first the SSB will come with a combination GPS/INS guidance system, in a hardened, very long casing with the standard explosive filler. Later phases will include a more potent filler and a laser seeker.³³

Wind-Corrected Munitions Dispenser (WCMD). One of JDAM's and JSOW's desirable traits is their low unit cost. Another is their accuracy from higher altitudes and greater distances. Similarly, adding kits to

standard submunitions dispensers provides low-cost standoff for weapons not needing the last increment of precision—the goal of the WCMD program.

The WCMD has a greater measure of adverse-weather capability than current standard dispensers. Obscurants can defeat most PGMs now in the inventory. The launch-and-leave WCMD depends on neither a jammable data link nor a seeker subject to jamming or blinding. The required CEP of 100 feet should yield a potent capability with scatter submunitions when environmental conditions inhibit the use of other armaments.³⁴

Joint Air-to-Surface Standoff Missile (JASSM). If the JSOW costs more than the WCMD because of range, it might still be cheap in terms of lost lives and airplanes. Still beyond JSOW, there were other programs built on the technologies of earlier efforts to achieve the same effects against other air defense systems.³⁵

The JASSM is to have a range longer than any other fighter-launched weapon, be capable of autonomous guidance and have a hard-target penetrating capability. The total procurement is to consist of about 2,400 missiles. The current aim is to deploy the weapon during 2002.³⁶

What are the implications for future security? For opposing surface forces, the sanctuary of distance began to diminish during World War I with the introduction of aircraft on the battlefield. The sanctuary of darkness began to be reduced when infrared sensors were introduced during the Vietnam War. By Operation *Desert Storm*, the sanctuary of hardness—the protection provided by layers of concrete—began to be diminished by the I-2000 penetrating bomb. It now seems certain we are on the verge of eliminating the last refuge—the sanctuary of weather.

Speculations for the Future

The US Army Air Force's darkest hour occurred during the weeks following the second Schweinfurt Raid of October 1943. Strategic bombers always got through to downtown

Germany, but too few of them made the round trip—far too few in view of damage inflicted. Through those agonizing months, the crisis' resolution seemed just around the corner. While initial 8th Air Force Spitfires threatened *Luftwaffe* defenders, the Germans merely backed off until the US fighters returned to base. The Spitfires were replaced with P-47s, which could reach further into occupied Europe, but the bombers' agony went on. Again, German fighters merely waited until the P-47s turned for home then waded into the hapless bomber formations. Innovations continued to shrink the sanctuary, but the *Luftwaffe* continued to come up with bigger cannons and rockets. When the agile P-51 finally appeared, the sanctuary disappeared. The P-51s could drop their external tanks and pop up behind the German fighters, where agility and rate-of-fire counted for more than weight of fire and gun range. The bomber crews' pain rapidly declined.³⁷

The penalty of premature commitment to a technological revolution was made clear over Schweinfurt. While there might never be another air campaign like it, an analogy can still be drawn. Since the days of airpower proponent Brigadier General William "Billy" Mitchell, airmen have been promising ground soldiers more than could be delivered. Who can blame soldiers for skepticism or for doubting their brothers in the air can make the march to some latter-day Berlin a cakewalk? The history of military technology is much more characterized by evolution than revolution. Perhaps there has never been a real revolution, except in the case of nuclear weapons. But, is it certain that just because such a revolution seldom happens, that one will never occur? The penalties for tardy recognition of a technological revolution could be worse than for premature commitment.

In *Thoughts for Joint Commanders*, Lieutenant General John H. Cushman passionately pleads for jointness.³⁸ However, some might question his use of the term. He seems to see a clear role for land-oriented campaigns with soldiers or perhaps Marines as joint command-

ers and of sea-oriented campaigns with admirals as joint commanders. Before NATO's involvement in Kosovo, an air-only campaign seemed remote.

Cushman recommends—as do I—that all fixed-wing air operations inside the fire support coordination line (FSCL) be coordinated with the ground commander. Yet, he seems to think that JFACC oversight of operations of Army helicopters or missiles forward of the FSCL is “inconceivable” for division and corps commanders.³⁹ “[T]he airman must adopt the land commander’s way of looking at the dynamics of the battle, and the land commander must understand how the airman must operate in his own medium, the air.... Despite ad hoc solutions in-theater (*Desert Storm*) [such as the theater commander’s naming his deputy to arbitrate between land commanders and the theater JFACC], targeting procedures and their products for what land commanders called ‘shaping the battlefield’ were never satisfactory from the land commanders’ viewpoints. The Navy in *Desert Storm* had similar complaints.”⁴⁰

If some troops saw no friendly fixed-wing close air support during the entire four-day ground war, neither did any see a MiG or a Frogfoot. If the conduct of the air war was unsatisfactory in land commanders’ eyes, just what would be satisfactory? It suggests to the Air Force that the Kasserine-era Army image of the air arm and its capabilities has not changed much; it is always a supporting arm, is insufficiently responsive and that only ground commanders can understand battle dynamics to control their own and joint forces.

Yet, every American prefers the outcome in *Desert Storm* to that in Vietnam. Many assert that *Desert Storm* was unique; that it will not work nearly so well next time. Others grant the uniqueness, but argue that improved and properly employed technology for the deep attack might work just as well next time. No one has considered another logical possibility; what if it works even *better*

next time?

If the last sanctuary is about to slam shut, and if an almost-unique revolution will enable airmen to better fulfill their promises next time, does not every soldier (and other American) owe it to the memory of the sufferers of the Battle of Ia Drang to at least consider the possibility?⁴¹ Can the air component ever be the supported force? *MR*

NOTES

1. Anonymous Operation *Desert Storm* helicopter commander.

2. LTC David R. Mets, “What If It Works? Air Armament Technology for Deep Attack,” *Military Review* (December 1986), 12.

3. Ernest R. May, *Lessons of History: The Use and Misuse of the Past in American Foreign Policy* (New York: Oxford University Press, 1973).

4. Mets.

5. Thomas A. Keaney and Elliot A. Cohen, *Revolution in Warfare? Air Power in the Persian Gulf* (Annapolis, MD: Naval Institute Press, 1995).

6. For a recent discussion of the various schools of thought relating to the Gulf War and an attempt to build the synthesis, see Stephen Biddle, “Victory Misunderstood: What the Gulf War Tells Us About the Future of Conflict,” *International Security* (Fall 1996), 139-79.

7. John Keegan closes *The Face of Battle* (New York: Penguin, 1978) with: “But the suspicion grows that battle has already abolished itself; Martin van Creveld in ‘High Technology and the Transformation of War,’ *The RUSI Journal* (December 1992), 61-64, and elsewhere argues that conventional war has become impractical, although other forms of conflict continue.

8. Colonel John D. Waghelstein, “Some Thoughts on Operation *Desert Storm* and Future Wars,” *Military Review* (February 1992), 80-83.

9. Howard Banks, “Lessons from the Gulf War,” *Forbes* (18 February 1991), 40-2; Eric H. Biass, “The Guided Dispenser: The Ultimate Attack Weapon,” *Armada* (August/September 1991), 6-14; Keaney and Cohen, 192.

10. Benjamin Lambeth, “The Technology Revolution in Air Warfare,” *Survival* (Spring 1997), 69; US Air Force Materiel Command, Directorate of Science and Technology, Wright Patterson Air Force Base, OH, “FY 97 Conventional Armament Technology Area Plan,” 1 May 1996, 7. The great difficulties in assessment have been recognized in the US Air Force Materiel Command where its Wright Laboratory Armament Directorate has a program to develop technology for air-to-surface weapons that will yield instantaneous feedback on the effects of their impact.

11. “Desert Storm: Gulf Victory,” *World Airpower Journal* (Summer 1991), 20-27; Ezio Bonsignore, “The Scud War,” *Military Technology* (February 1991), 77-9; Group Captain Niall Irving, “The Gulf Air Campaign—An Overview,” *The RUSI Journal* (February 1992), 12; Keaney and Cohen, 223.

12. Barry Watts, “Aerospace Power in the 21st Century: A Theory to Fly By,” 6. This draft is an alternative report for an Air University strategic air warfare panel composed of Air War College faculty. Panel member Carl Builder suspects there will be few or no more conflicts like *Desert Storm*; he believes nation-states will be the primary actors at least until 2025. For a compact and coherent discussion, see A.J. Bacevich, “Just War, Morality and High-Technology,” *The National Interest* (Fall 1996), 37-47, and Russell E. Travers, “A New Millennium and a Strategic Breathing Space,” *Washington Quarterly* (Spring 1997), 95-114.

13. See for example, Harry Summers, *A Critical Analysis of the Gulf War* (New York: Dell, 1992), 95-116, and Price T. Bingham, “Let the Air Force Fight Future Land Battles,” *Armed Forces International* (August 1993), 42.

14. Kenneth S. Brower and Steven L. Canby, “Weapons for Land Warfare,” *The Future of Smart Weapons* (Washington, DC: American Association for the Advancement of Science, 8 February 1992). Brower and Canby remark: “The Iraqis were so inept that air power could have won the war alone, as could have the Army and Marines. Almost any plan would have been one-sidedly successful.”

15. LTG Charles A. Horner, “The Air Campaign,” *Military Review* (September 1991), 20. For an opposing view, see Alan Gropman, Industrial College of the Armed

Forces, “How Much Aerospace Force is Enough for the New World Order?” This speech was given at a conference sponsored by the USAF Deputy Chief of Staff for Plans, Washington, DC, 16 March 1993. Gropman asserts that the centralized command controversy was merely “papered over” during *Desert Storm*. See also BG M.T. Hoppood Jr., “Experience: Handle With Care,” *US Naval Institute Proceedings* (October 1991), 81-2. Hoppood remarks: “Joint success on the battlefield promises less interservice competition (cited as a possible ‘lesson’ of *Desert Storm*). This is a lesson likely to be praised with lip service and ignored in practice.”

16. B.H. Liddell Hart, ed., *The Rommel Papers* (New York: Harcourt Brace, 1953), 403, quotes Rommel as saying, “The bad weather, despite the difficulties it gave us was actually very much to our advantage, as it prevented the enemy from bringing the full weight of his air force to bear, the effect of which, in the deep, ravine-like valleys, would have been very severe.”

17. Bill Sweetman, “Close Air Support: Fighters High, Helicopters Low,” *International Defense Review* (November 1992), 1,077-81.

18. Horner, 25. He remarks: “By the time the ground war began, [the Iraqi’s] will to fight had been so damaged [no strong resistance existed]. What transpired in the 100-hour ground war serves as testimony of the impact air power can have on the modern battlefield.”

19. John M. Collins, “Desert Storm and Lessons of Learning,” *Parameters* (Autumn 1992), 83-95. Collins warns against excessive reliance on technological solutions. See also Elliot A. Cohen, “The Meaning and Future of Air Power,” *Orbis* (Spring 1995), 193.

20. For arguments on the need for low-cost, low-technology weapons and sufficient mass and combat options for flexibility, see Collins. For rebuttal, see LTG Buster Glosson, “Impact of Precision Weapons on Air Combat Operations,” *Airpower Journal*, (Summer 1993), 110-11. Glosson participated in the Gulf War air campaign and is a proponent of the high-tech/air power approach.

21. Among many available references, the following provide more information: “Fraser approves JDAM/JSOW go-ahead; seeker commonality stressed,” *Aerospace Daily* (25 June 1992), 494; John Boatman, “USAF, Navy agree on ‘smart’ bombs,” *Jane’s Defence Weekly* (29 February 1992), 6; David A. Fulghum, “DAB Approves Development of a Joint Stand-Off Weapon,” *Aviation Week & Space Technology* (15 June 1992); “Pentagon to Approve JSOW Development, Initial Work on Direct-Attack Munition,” *Aviation Week & Space Technology* (1 June 1992), 28; “USAF Holds Pre-JDAM Test,” *Aviation Week & Space Technology* (5 July 1993), 27; “ATARS Sensors Likely to Find New Homes,” *Aviation Week & Space Technology* (5 July 1993), 28; John Haystead, “Autonomous Weapons—Are We Smart Enough for Them?” *Defense Electronics* (February 1992), 29-37, 65.

22. Interrogation of Field Marshall Karl Rudolf Gerd von Rundstedt, 2 September 1945, box 134, *Spaatz Papers*, Manuscripts Division, Library of Congress, Washington, DC.

23. Edward J. Walsh, “Air Force, Navy Precision Weapons Pack Power in Economical Packages,” *National Defense* (May/June 1997), 34-35.

24. US Air Force, Headquarters, Air Combat Command/DRPW, “Final Joint CAF and USN Operational Requirements Document for Joint Direct Attack Munition,” 23 August 1995.

25. Herman L. Gilster, *The Air War in Southeast Asia* (Maxwell AFB, AL: Air University Press, 1993), 59-73; John A. Doglione et al., *Airpower and the 1972 Spring Invasion* (Washington, DC: Office of Air Force History, 1985).

26. Biddle, 169.

27. Walsh, 34.

28. LTC Steve McNamara, “Assessing Air Power’s Importance: Will the QDR Debate Falter for Lack of Proper Analytic Tools,” *Armed Forces Journal International* (March 1997), 36.

29. *Ibid.*; Walsh, 35; Braybrook, 32; John A. Tirpak, “Brilliant Weapons,” *Air Force* (February 1998), 53.

30. Tirpak, 51-52.

31. William S. Cohen, “Report of the Quadrennial Defense Review,” May 1997, 40; Roy Braybrook, “Not-too-Close Encounters of the Air-to-Ground Kind,” *Armada* (February/March 1996), 36; Clifford Beal, “Bolt from the blue: standoff weapon developments,” parts 1 and 2, *International Defense Review* (August 1992); Heinz Hilgendorf, “Are Stand-off Air-to-Ground Weapons a Necessity?” *Military Technology* (June 1993), 57-62; Biass, 6-14; John D. Morocco, “Navy Primed for JSOW Critical Design Review,” *Aviation Week & Space Technology* (27 February 1995), 48; US Air Force Air Combat Command, “Air Combat Command Operational Concept for the Joint Standoff Weapon,” 28 March 1994.

32. Air Force Materiel Command, Directorate of Science and Technology, Wright Patterson Air Force Base, OH, “FY 96 Conventional Armament Technology Area Plan,” 1 August 1995, 13; Fulghum, “Small Smart Bomb to Raise Stealth Aircraft’s Punch,” *Aviation Week &*

Space Technology (27 February 1995), 50; US Air Force White Paper, "Precision-Guided Munitions Investment Strategy," 25 April 1995, 19; Tirpak, 53; I-250, "Small Smart Bomb," *Jane's Air Launched Weapons* (11 November 1998), on-line <<http://fore.thomson.com/janes>>.

33. *Ibid.*
34. US Air Force White Paper, 8; "USAF plans intertil dispenser selection this month," *Jane's International Defence Review* (January 1997), 10; US Air Force, Headquarters Air Combat Command/DRPW, "Final Operational Requirements Document, Wind-Corrected Munitions Dispenser," 23 September 1994; "Wind-Corrected Munitions Dispenser," *Air Force* (May 1998), 159.

35. Fulghum, "TSSAM Follow-on to Take Shape This Year," *Aviation Week & Space Technology* (27 February 1997), 49; US Air Force Headquarters Air Force/XORW, "Joint Air-to-Surface Standoff Missile, Program Management Directive (PMD) 2389," (1), 2 February 1996.

36. *Ibid.*; Trevor Nash, "Stand-off and Deliver," *Armada* (August/September 1996), 48-57; Glenn W. Goodman Jr., "Mining Silver Bullets: Navy and Air Force Pursue Longer Range, Autonomous Standoff Weapons," *Armed Forces Journal International* (July 1997), 26-7. As of 1997, the House of Representatives was threatening to cancel the JASSM if the US Air Force failed to make a better case than it had (*Defense Daily*, 23 July 1997, 131), but by 1999, the situation had improved ("JASSM-Launch & Leave" Subsonic Cruise Missile Design," 1999, Joint Air-to-Surface Standoff Missile, on-line <<http://jadamus1.eglin.af.mil/84>>).

37. The turning of the tide was much more complex than depicted. The removal of the last place the *Luftwaffe* could hide was significant. William R. Emerson, "Operation Pointblank: A Tale of Bombers and Fighters," in Harry

R. Borowski, ed., *The Harmon Memorial Lectures in Military History, 1959-1987* (Washington, DC: Office of Air Force History, US Air Force Academy, 1987), 441-72, shows that the ratio of P-47s to P-51s during the crucial hours in February 1944 was something like 9:2.

38. LTG John H. Cushman, *Thoughts for Joint Commanders* (Annapolis, MD: privately printed, 1993).

39. *Ibid.*, 33.

40. *Ibid.*, 39.

41. I do not mean to imply that JDAM and JSOW alone constitute a possible technological revolution. In "The Integration of Technology and Doctrine in the USAF," in Alfred F. Hurley and Robert C. Ehrhart, eds, *Airpower and Warfare* (Washington, DC: Office of Air Force History, US Air Force Academy, 1979), 386-400, Robert Perry argues persuasively that the most significant military changes in the past have not usually arisen from some dramatic and radical technological improvement. He believes significant changes have come from the synergy among several fairly mature technologies each of which was only an evolutionary change. See also Michael O'Hanlon, "Can High Technology Bring U.S. Troops Home?" *Foreign Policy* (Winter 1998-99), 74, and LTC Harold G. Moore and Joseph L. Galloway, *We Were Soldiers Once . . . and Young* (New York: Random House, 1992) for a gripping tale of the battle, including fratricide and CAS as practiced in Vietnam. Incidentally, I am persuaded that not only has the Army Officer Corps a somewhat outdated view of the USAF and its technological capability, but also of the air arm's officer corps. During world War II more than half of the USAAF officers did not have bachelor's degrees, now they all have them, and by the time they are majors it is quite common for them to have master's degrees.

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Close Quarters Combat and Modern Warfare

by Ray O. Wood III and

Major Matthew T. Michaelson, US Army

Technical advances in modern warfare have compromised the combat needs of individual soldiers who must confront the enemy at some point to complete their missions. New battlefield technology distances the individual soldier psychologically and physically from the enemy. To some people, these developments diminish or eliminate the need for hand-to-hand and rifle-bayonet training at the small-unit level. Consequently, close quarters combat (CQC) training, which encompasses both hand-to-hand and rifle-bayonet skills, is no longer perceived as a mission-essential skill for today's high-tech soldier.

CQC training prepares soldiers to face the enemy in the last six feet of a battlefield. At this range, the most-effective weapon is still an individual soldier trained in hand-to-hand combat and rifle-bayonet techniques: CQC is the final option. With it, soldiers can engage and defeat an enemy face-to-face when retreat or avoidance is not possible and injury, death or capture are the consequence of failure.

Determinants of Survival in CQC

Three things determine success and survival in CQC: an aggressive

mind-set, a survival mentality and skills specifically designed for the type of combat. An aggressive mind-set can be defined as the willingness to kill, maim or injure the enemy as the mission or personal survival requires. A survival mentality enables a soldier to engage an enemy and continue to fight despite pain, injury and the prospect of death or capture. The third determinant—CQC skills—involves the execution of techniques specifically designed to render an opponent unconscious, dead or incapable of fighting.

CQC Versus Combative Sports

A martial art may be practiced with four different goals in mind: sport proficiency, physical discipline or exercise, mental discipline or as a way of life, and as a means of self-defense. CQC training is a military application of the self-defense goal. Although combative sports (CS) and CQC training overlap, CQC training focuses on combative skills, a specific training environment and an aggressive mind-set not normally part of training.

Fair play and sportsmanship are expected and approved behaviors in all sports. However, fair play and

good sportsmanship are inappropriate in CQC and can have unfortunate and even lethal consequences. Both CS and CQC training encourage a soldier to seek and exploit the opponent's or enemy's weaknesses, but in CQC the consequences can be lethal. While the physical, cognitive and affective training in CS somewhat parallels what occurs in CQC training, at the moment of truth in competition, an instructor, coach or referee protects the antagonists from serious injury. There are no referees on the battlefield.

CQC skills are often confused with those of boxing, wrestling, competitive karate or judo. CS techniques are a function of the discipline's style and philosophy. The most prized techniques are those that facilitate scoring under competitive rules. Techniques deemed dangerous or even lethal are modified or prohibited in competition to reduce the possibility of injury.

CQC techniques are practiced because of their effect on an enemy, not because they would facilitate scoring in CS competition. Injurious CS techniques and their underlying abilities can be acquired and honed in a controlled risk environment. However, participation in CS alone can promote attitudes, behaviors

and skills incompatible with CQC focus and an aggressive survival mind-set. In CQC, soldiers may be involved in life-threatening situations that do not entail the same degree of social accountability present in CS competitions.

A final concern when comparing CQC training and CS is the training environment. CQC training is generally conducted in a field environment at the small-unit level. CS training is generally conducted in a gymnasium or training environment structured to optimize learning and sport performance. CS avoids practicing in environments where real-world detractors such as weather, terrain, clothing, equipment and sensory distractions impede performance. Realistic CQC training must include extensive field training to develop an awareness of the conditions that might affect performance. Although field training contributes to skilled performance under real-world conditions, it is not generally an optimal environment for learning the complex motor skills commonly associated with CQC.

Rear

The fear engendered by unarmed combat is qualitatively different from the fear generated by other types of military training such as parachuting or repelling. Airplanes and cliffs are inanimate objects. A soldier has the option to accept or reject these challenges. However, an airplane or cliff does not run you down, look you in the eye, hit you with an entrenching tool and stomp on your head repeatedly when you are on the ground. The threat in physical combat has a face and a name. It is personal, and it will not stop if you refuse to accept the challenge.

When does a soldier learn to fight one-on-one and in so doing learn to confront death with a face? Normally, soldiers are taught to deal with the risks and fears associated with combat. They practice what they have been taught until they are prepared to meet these challenges. However, no military school or training program is specifically dedicated to developing the coping strategies and skills necessary for survival.

Hand-to-hand training and rifle-bayonet training are practical, low-cost, low-tech means of teaching a soldier how to fight and control the fear inherent in CQC. CQC training at the small-unit level gives soldiers the means to deal with the fear and prospect of a physical confrontation and provides commanders insight into their troops' psyche and combat readiness. Soldiers trained to deal with fear, injury or death in a physical confrontation have confidence in their ability to survive such an encounter and will better deal with these same stresses when they are physically and psychologically more imminent.

CQC Training as a Coping Mechanism

Soldiers learn to deal with fear through a fear-management technique called "fear inoculation," in which the training intensity level and skill requirements for success are systematically and progressively increased until soldiers attain an established performance standard. The beginning standards are a function of soldiers' entry-level behaviors and affective conditioning. CQC training educates soldiers about the nature of fear in physical confrontations and provides coping techniques—skills, strategies and tactics.

Placing soldiers in a structured CQC training environment sets up the trainee for success. Competence is a foundation for confidence and produces intangible psychological and affective benefits. As they overcome each hurdle, soldiers become aware of their growing competence, and ultimately their confidence increases.

CQC Training is Essential

It has been argued that CQC training is more mission-essential for some personnel and units than for others. Because a unit's mission determines to some extent the probability and conditions under which a soldier might meet an enemy face-to-face, certain types of missions have a greater potential for face-to-face contact. For support units located in

a rear area, however, face-to-face contact with an enemy might be an unexpected consequence of a mission gone wrong or a rear insertion by the enemy. In either case, even a support soldier must be prepared to deal psychologically and physically with the enemy. The reality of combat is that soldiers must deal with the enemy on a personal level at some point for complete mission success.

Infantry units, special operations units and personnel involved in policing duties have a higher probability of physical confrontation with enemy personnel at close quarters than other units. Therefore, these units provide their soldiers with an appropriate set of skills and attitude to deal with face-to-face contact. Units that do not expect a physical confrontation with the enemy normally do not train their soldiers for this contingency. However, basic combative skills must be common throughout all types of units. If a helicopter is shot down and the crew is forced to escape and evade, the members must be prepared to deal with the enemy face-to-face.

An aircrew confronting the enemy will have a different mind-set and repertoire of fighting skills than its infantry or special operations counterparts. Every unit is trained to fight an enemy in a specified context. The emotional states, psychological conditions of engagement and fighting skills are different for these soldiers than for soldiers trained for CQC. However, when an enemy is confronted, the physical challenge and consequences of failure are the same. An unexpected or surprise encounter is even more stressful than an anticipated one, so all units should train for such contingencies. Clearly, soldiers not trained to fight in close quarters might not survive this type of combat.

As the modern battlefield changes and new missions evolve, today's rear echelon could be tomorrow's close-quarters fight. Because we cannot dictate or predict with certainty when and where we will encounter the enemy, we must prepare

all soldiers for the unexpected. For example, police and peacekeeping duties have been added to the mission spectrum. The use of lethal force, which is a hallmark of training for combat missions, is generally not an acceptable first-response option in such conflicts. Units and soldiers must have a complete range of response options that include non-lethal responses to physical conflict. CQC training provides a graduated force option for physical confrontations and concurrently increases the individual's likelihood of survival, regardless of the mission or circumstances.

Army CQC Training

Rifle-bayonet and hand-to-hand combat were dropped from basic training in the 1970s then revived in the late 1980s. Today, the Army has no designated subject matter experts for CQC or dedicated CQC instructor training program or school. Without an infrastructure for developing skilled CQC instructors, the Army can hardly support unit-level programs.

A drill sergeant certified to teach a four-hour program of instruction (POI) based on US Army Training and Doctrine Command (TRADOC)

Field Manual (FM) 21-150, *Combatives*, conducts CQC training during soldiers' initial-entry training.¹ The certification program for drill sergeants is standardized for each Army training center (ATC) but not across different ATCs. Each ATC certifies an instructor to teach a TRADOC-approved POI for each unit. Although the Ranger Training Brigade is the proponent for CQC, it trains instructors in-house to teach a TRADOC-approved POI.

The potential contributions of CQC training to individual soldier's battle readiness and effectiveness are diminished by the lack of a centralized and dedicated instructor-training program. Such a program or school would assess CQC needs at all levels, develop new doctrine and programs and train instructors to conduct and maintain unit-level programs. Unfortunately, the sole institutional resource for CQC doctrine remains FM 21-150.

Recommendations

CQC has a viable role in training soldiers for modern warfare and should be regarded as essential. In addition, CQC doctrine and training programs should be reviewed with the following goals in mind.

- To assess CQC needs at all

levels.

- To develop doctrine and programs to meet established needs.
- To institute an instructor training program.
- To provide instructors to teach and maintain unit-level CQC proficiency.

Implementing a comprehensive dedicated CQC program will enhance soldiers' physical, psychological and effective readiness and serve as a force multiplier when physical contact with the enemy is unavoidable. **MR**

NOTES

1. US Army Field Manual 21-150, *Combatives* (Washington, DC: US Government Printing Office, date unknown).

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Data Analysis and Decision Making

by Colonel Ronald E. McRoberts and

Colonel Timothy J. Sanken, US Army National Guard

Recently, the Minnesota adjutant general's highest strategic priority has been strength and strength maintenance. However, the lack of rigorous analyses of causal relationships means that objectives and programs that support such strategic ends are based mostly on assumptions and anecdotal evidence.

To determine factual and supportable evidence, the special-projects section and the training division of the Plans, Training and Operations Directorate of the Minnesota National Guard State Area Command (STARCMN) statistically analyzed data obtained from

operational readiness reports and evaluations to determine how unit performance affects retention. These analyses revealed strong relationships between a measure of strength management and measures of unit performance. Although the findings confirm previous assumptions and anecdotal evidence, they provide the rigorous analyses necessary for confident decision making and program formulation.

Research Parameters

The annual battalion attrition rate as reported on the unit status report (USR) was selected as the strength measure for analysis because:

- The annual battalion attrition rate is objective, easy to calculate and readily available.
- For each company-size unit the adjutant general established an unambiguous, annual attrition-management objective of 18 percent.
- The annual attrition rate is regarded as the most sensitive of strength measures to unit performance.
- The quantitative nature of attrition rate facilitates statistical analyses.

Attrition rates. To avoid some of the variability present in rates for companies within the same battalions, battalion attrition rates rather

than company attrition rates were selected. This decision is justified on the basis that all companies in a battalion operate under the same general training and performance guidance. In addition, data for several small battalions were aggregated for both the troop command and the aviation brigade.

In the search for factors related to annual battalion attrition rates, variables considered included, but were not limited to, weapons qualification, annual training attendance, percent educationally qualified, Army Physical Fitness Test pass rates, USR-reported variables and inspection results. When variables were reported more frequently than annually, the value reported at the end of the fourth quarter was selected because of its correspondence with the end date for calculating annual attrition rates. As with attrition rates, data were aggregated at battalion level with the exception of the troop command and aviation brigade.

Inspection results. Inspection results were obtained from archived data from Minnesota Operational Readiness Evaluations (MORE), which is the adjutant general's organizational inspection program for the Minnesota Army National Guard (MNARNG). MORE is a comprehensive evaluation of company-size units that combines all STARC-MN regulatory inspections, nonregulatory inspections, evaluations and staff inspections. MORE evaluates all MNARNG company-size units on a rotating basis with approximately 20 units evaluated each year. MORE's focus is objective evaluations in six functional areas: personnel, safety, security, training, mobilization and logistics. Functional areas are divided into categories, categories are divided into tasks, and tasks are classified as critical or noncritical. Evaluations are based on established checklists and consist of either a GO or NO-GO for each task. A NO-GO for a single critical task results in a NO-GO for the entire category. The percentages of categories receiving GOs in each of the six functional areas were analyzed as possible factors related to attrition.

Analyzing the Factors

An initial screening of variables for relationships with annual battalion attrition rates indicated further analyses were warranted for three variables:

- The duty MOS qualification (DMOSQ) rate as reported on the USR.
- The percentage of GOs in the MORE-training (MORE-T) functional area.
- The percentage of GOs in the MORE-personnel (MORE-P) functional area.

The analyses focused on describing and interpreting relationships between the annual battalion attrition rate and these three variables.

Analyses consisted of fitting straight lines to the attrition rate versus DMOSQ, MORE-T and MORE-P data. In statistics, the fitting technique is known as "linear least-squares regression" and consists of the following steps:

Step 1. A statistical model for the straight line is formulated as

$$Y = \beta_1 + \beta_2 X + \epsilon,$$

where Y is the annual battalion attrition rate and is referred to as the dependent variable; X is either DMOSQ, MORE-T or MORE-P and is referred to as the independent variable; β_1 and β_2 are coefficients to be estimated; and ϵ is a residual component corresponding to the distance between the point and the fitted straight line.

Step 2. The values for the coefficients are determined so the sum of the squared distances between data points and the hypothesized straight line is minimized.

Step 3. The statistical significance of the fit of the line is assessed.

The meaning and use of statistical significance warrants further discussion. Many statistical techniques are used to infer relationships for populations based on analyses of population samples. For these attrition analyses, the population is considered to be all MNARNG battalions in the current era, while the sample consists of battalions for which attrition rates, DMOSQ, MORE-T and MORE-P are available for the training year 94 through 98 period.

When basing an inference on a sample, there is always a chance that the sample will not adequately represent the entire population and that the inference will be incorrect. P denotes the probability of an incorrect inference, termed the "statistical significance," and depends on the number of observations, the number of coefficients in the model and the variability of the data around the fitted line. P values are also used as measures of the strengths of relationships, with smaller P values indicating stronger relationships. In the scientific literature, relationships are generally not reported as significant unless P is less than or equal to 0.10, but more frequently, not unless P is less than or equal to 0.05.

Results

The results of the linear regressions indicate that the strengths of the relationships between the annual battalion-attrition rate and the three independent variables vary. For DMOSQ, $P=0.005$ indicates a highly significant relationship. For MORE-P, $P=0.23$ indicates a relationship that is worth considering but is not conclusive. For MORE-T, $P=0.07$ indicates a significant relationship. The results for DMOSQ and MORE-T are generally as expected: the annual battalion attrition rate decreases as the value of the independent variable increases.

An additional independent variable, the minimum value of MORE-P and MORE-T (MIN(P,T)) was also analyzed and found to be importantly related to attrition with $P=0.01$. To illustrate the nature and strength of this relationship, the plots were augmented with a horizontal line depicting the adjutant general's attrition-management objective and three natural groupings of the data with respect to MIN(P,T). The strength of the relationship is apparent when noting that in grouping A, which corresponds to the lowest MIN(P,T) scores, none of the battalions achieved the attrition-management objective, while in grouping C, which corresponds to the highest MIN(P,T) scores, only one battalion failed to achieve the objective. No such relationship was evident for the maximum of MORE-P and MORE-T.

The relationship between attrition and MIN(P,T) is interpreted as meaning that MORE-P and MORE-T are simultaneously and jointly related to attrition. In particular, the relationship suggests that poor performance in only one of the two areas—personnel or training—is sufficient to adversely impact attrition, regardless of performance in the other area. Thus, excellent personnel support throughout a battalion might not be able to compensate for poor training. Similarly, excellent training might not be able to compensate for poor personnel support. Quality in both areas is necessary in order to retain quality soldiers.

Conclusions

Although caution must be exercised in inferring causal relationships from simple statistical analy-

ses, two conclusions from this study—one particular and one general—appear warranted. The particular conclusion is that the strengths of the relationships between attrition and DMOSQ and between attrition and MIN(P,T) provide convincing evidence that the adage “Ignore your soldiers, and they will go away,” could cease to be homily and become fact. Attrition-management programs that do not address duty MOS training, personnel support and company-level training will most likely fail.

Simple statistical analyses should be further investigated as a means of establishing quantitative relationships as the basis for decision making and program formulation. User-friendly computer databases—for archiving inspection and readiness data—and statistical software—for

analyzing these data—provide alternatives to reliance on assumptions and anecdotes.

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MR Letters

The Worst Case

The article by Major Gregory A. Pickell, “Planning for Major Theater Wars: Examining the Worst Case,” in the January-February 2000 issue of *Military Review*, is interesting for the amount of research he did. Unfortunately, the article is fundamentally flawed. Some of Pickell’s basic premises are either untrue or based on an inaccurate interpretation of the facts. Because I spent the last five years at BCTP in the study and application of Army doctrine, I question Pickell’s grasp of the subject.

On page 43, Pickell states: “2ID [2d Infantry Division] will likely not perform well at the tactical level. The reasons for this are manifold, and they include flawed defensive tactical doctrine and inappropriate weapon system technologies. . . .” Unfortunately, he does not significantly document this assertion or suggest an improvement.

On page 44, supported by Figure 2 on page 45, Pickell discusses a notional defensive concept for the 2D

ID. I use the term “notional” because this is not the 2ID plan. Pickell also overlooks the 20-plus Republic of Korea divisions that will be involved in South Korea’s defense. Pickell states: “Perhaps the greatest doctrinal disconnect regards US tactical defensive doctrine, which requires defense in depth coupled with a symmetric battlefield approach.” This statement reflects a complete misunderstanding of Army doctrine. There are no entries in Field Manuals 71-100, *Division Operations*; 71-3, *The Armored and Mechanized Infantry Brigade*; or 7-30, *The Infantry Brigade*, that support this conclusion. Note 12, which Pickell uses to support this assertion does not reference a source and is obviously his own conclusion, which again is doctrinally incorrect. The note asserts that this array would result in no reserve. While this might be true, Army doctrine highly recommends the retention of a reserve, especially when enemy intentions are unclear.

The Army’s patterns of defense give a commander two choices: an area defense, which is further divided into forward and in-depth variants, and a mobile defense, which concentrates combat power to strike the enemy in a decisive fashion. There is nothing in Army doctrine that “requires” one over the other.

On page 44, Pickell asserts that the TOW missile is “dangerously inappropriate,” but he does not present any facts to support this position. In my initial assignment, I served in the 2ID as a weapons platoon leader in a straight-leg infantry battalion (H series), which included 81-millimeter mortars and TOW missiles. Korea has multiple areas where the TOW would be of considerable value, especially in the primary historical invasion route, the Chorwon Valley.

I assume Pickell is a product of the CGSC system, either as a resident or in a Reserve Component, and I believe his article points out one of the major flaws in the current form of

CGSC. The Army does not require graduates to have a complete and accurate grasp of doctrine. The same thought applies to the military decision-making process, which is widely maligned because of a lack of understanding of how it works.

Reading Pickell's professional biography, which is understandably brief in this context, I am struck by the fact he appears to have no practical experience in the areas he attacks. I do not believe you need to fight a war to understand the concept, but Pickell appears not to understand weapons applications. Even if everything he said were true, what doctrinal change does he recommend, and what weapon should replace the TOW in Korea?

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Fort Meade, Maryland**

Fundamental Right

While I appreciate many of LTC Jack E. Mundstock's comments regarding my article, I must take issue with his criticism of me and many of the arguments I presented. Though Mundstock's defense of current US military policy in Korea is understandable, I suspect his time in BCTP has made it difficult for him to examine this contentious issue from an unbiased perspective.

Mundstock notes that the scenario outlined in the article is not the actual plan for the peninsula's defense. As he is aware, describing the plan itself would require discussing classified data, certainly an unacceptable alternative. The article never states that the scenario described is the actual 2d Infantry Division plan.

Mundstock's criticism of the CGSC system is also surprising. He argues from the perspective of a doctrine expert and is clearly implying that his doctrinal expertise did not come from Leavenworth. This in turn suggests that he developed his expertise through self study and informal professional development, which I applaud—his approach mirrors my own in many ways. Yet he notes that my background does not qualify me to talk about Korea. My ques-

tion is then, what qualifies Mundstock as a doctrine expert if not Leavenworth? While the CGSC system is certainly imperfect, it nonetheless performs a critical function in officer development.

I do agree with Mundstock on one important point. Neither of us has fought a war on the Korean peninsula, though I have found my way to two war zones in the past decade.

While Mundstock's technical comments are welcome, I found his remarks regarding my qualifications as well as his criticism of CGSC unfortunate. Attacking points made during the course of an argument is an important part of the learning process; attacking an author's right to make the argument is simply inappropriate.

**Major Gregory A. Pickell,
USANG Readiness Center,
Alexandria, Virginia**

Information Request

I am doing research for a book on Lieutenant General Walton "Bulldog" Walker, Eighth Army Commander during the Korean War. I would like to receive any information about him and his Korean War service. I am also seeking information on his son Samuel Sims Walker, who graduated from West Point in 1946 and served in the 24th Division in Korea. I can be contacted at, missfiresioux@cs.com, FAX 301-449-7638 or phone 301-449-1413.

**Colonel Suelyn Wright Novak,
USA, Temple Hills, Maryland**

Marshall Myth

I am continually amazed and bitterly disappointed to find the S.L.A. Marshall ratio-of-fire myth alive and well in today's Army. I refer to Major Kelly C. Jordan's use of that myth in "Harnessing Thunderbolts" in the January-February 2000 issue of *Military Review*. Like many of his peers, Jordan apparently does not know that Marshall's ratio-of-fire has been debunked. If he is unaware of why the debunking, I will gladly send him the information.

I commanded a rifle company in

the 84th Infantry Division in northwest Europe for four months during three campaigns from 1944 to 1945 and have disputed Marshall's findings ever since they first appeared in the old *Infantry Journal* in 1946-1947. Marshall never spent a day in combat with any infantry unit in Europe but claimed to have first-hand experience. I want to point out again that Marshall's ratio of fire has no substance. I would bet that every West Point cadet believes in it, judging from the number of instructors at the Academy who apparently believe it.

My major complaint with Jordan's article, though, centers on Marshall's Operations Research Office (ORO) study, which he did for Johns Hopkins University in 1951. I have an original copy of the study, but I am certain its pagination is the same as the copy Jordan uses. Jordan also states that he uses information that can be substantiated from other "than Marshall's own somewhat suspicious data and a secret formula that died with him in 1977" to demonstrate that "the American infantry platoon's ratio of fire increased from a high of 25 percent in World War II to approximately 55 percent by the end of the Korean War." Secret formula? Get real! Other sources? Footnote 6 does not list those sources, but Jordan does tell us in that same footnote that he is publishing another article in a different publication on the same subject. Perhaps he will list those "other" sources with that article. I am looking forward to reading it.

I would refer your readers to the ORO study, pages 59-62. In those pages, Marshall tells how he arrived at his figure supporting the statement that "well in excess of 50 percent of troops actually committed to ground where fire may be exchanged directly with the enemy will make use of one weapon or another in the course of an engagement." He then qualifies his estimate: "In the Korean fighting, there is manifestly a higher percentage of participation by riflemen . . . than in operations during World War II. This can be felt, rather than accurately counted, and therefore, it is difficult to arrive at an accurate percentage figure indicative

of the increase. However, *averaging out the night and day operations* (emphasis mine) . . . it is considered that . . . well in excess of 50 percent used a weapon.” What a reliable system!

Marshall also points out the differences between offensive and defensive operations and the different ratios of fire between the two types of operations. He excuses the soldiers in Korea from firing during an offensive operation because of the terrain, but I do not remember him giving us the same slack in Europe during World War II.

In my opinion, Marshall’s findings in Korea are as much a myth as are his World War II findings, at least as far as a ratio of fire is concerned. Yelling, screaming, shouting at each other? In the defense? Fine. In the offense? Seldom is this sort of thing necessary, except occasionally by leaders. But Marshall loves this sort of thing, so let us make his followers happy.

Finally, did my men fire? I haven’t the slightest idea, and I question whether any other company commander in northwest Europe during 1944 and 1945 went around after an action checking to determine who

did and who did not fire. I remember querying a senior officer who had commanded a company at Hamburger Hill during the Vietnam War on this subject. He assured me every one of his men fired, despite the fact a number had been killed or seriously wounded before they ever got into close firing range. I wanted to know how he knew his men fired. He just knew they did, that’s how. Sounds like S.L.A. Marshall, doesn’t it?

LTC Albert N. Garland,
US Army, Retired,
Columbus, Georgia

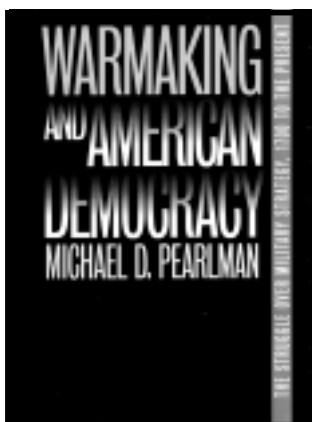
MR Book Reviews

WARMAKING AND AMERICAN DEMOCRACY: The Struggle Over Military Strategy, 1700 to the Present, by Michael D. Pearlman, University Press of Kansas, Lawrence, KS, 1999, 441 pages, \$45.00.

Michael D. Pearlman’s unique book, *Warmaking and American Democracy*, offers the first truly American perspective on the evolution of US military strategy. Most studies of US warmaking give a Eurocentric critique fundamentally incommensurate within a democratic political framework.

The Eurocentric critique is the Clausewitzian-authoritarian formulation that elevates the force of political reason and authority—embodied in the king as political leader and military commander in chief—above the people and the military. The democratic critique, developed by Pearlman, places the Clausewitzian “trinity” under the force of law and the legal institutions of the state. The constraints and restraints of democratic legal institutions on political and military decisionmaking give US warmaking its unique quality and character.

Shortly after the Civil War, the Federal Army was removed from the president’s executive control and placed under congress’s legislative authority—an inexplicable relationship within the Clausewitzian frame-



work. Pearlman iterates that many apparent conflicts over strategy were in fact clashes between political-strategic frameworks. One of the most intense clashes occurred between President Harry S. Truman and General Douglas MacArthur in the early 1950s. Steeped in the Eurocentric warrior’s tradition, MacArthur evidently could never completely understand that the US Constitution stood above matters of strategic interest and that security issues extended beyond the defense of state borders and embraced the security of a piece of paper.

Pearlman shows that the inherent tension between Constitutional authority and political-strategic freedom of action becomes most intense when the object of war is vague and

national motivation is weak. For example, the Vietnam War revealed the consequences for a democracy when it is forced to clarify war aims and steel national resolve in the face of immovable, constitutionally guaranteed individual rights.

Pearlman provides a broad, synoptic and penetrating study of American warmaking and strategic formulation within the framework of democratic constitutional political institutions. As such, the work provides a new basis for an American interpretation of Carl von Clausewitz’s classical study, *On War* (Viking Press, New York, 1983, \$12.95).

James J. Schneider,
School of Advanced
Military Studies,
Fort Leavenworth, Kansas

WAR ALONG THE BAYOUS: The 1864 Red River Campaign in Louisiana by William Riley Brooksher, Brassey’s, Washington, DC, 1998, 287 pages, \$27.50.

Vicksburg is captured. The Union controls the Mississippi River. The South is split. The Confederate trans-Mississippi is isolated; Louisiana, Arkansas and Texas can no longer contribute to the Confederate war effort. Why then did the Union launch a combined Army-Navy operation up the Red River into Texas?

A campaign is not always based on military considerations. The attack up the Red River was for political and economic reasons. France, challenging the Monroe Doctrine, was actively trying to conquer Mexico. A French Mexico posed several threats to the Union. By becoming a major outlet for the sale of Southern cotton, Mexico could also become a source of revenue to the Confederacy. Three years worth of cotton was stored throughout the South because only a small percentage had been successfully exported. By seizing the Red River cotton, the Union could earn a tremendous profit.

France and the Confederacy as trading partners might increase the chances of official French recognition of Confederate President Jefferson Davis's government. There was a real fear that France would support an independent Texas or demand the return of Texas to Mexico.

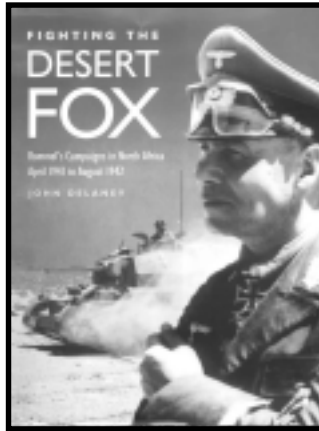
The combined nature of the campaign provided a unique set of issues and problems. Interservice rivalries, poor planning, lack of coordination and cooperation, low water in the river and the lack of water and provisions in the countryside all contributed to Union failure. William Riley Brooksher covers both sides of the campaign as well as its preparatory phase and aftermath and examines leading commanders' personalities.

This book is highly readable and easy to comprehend. The maps are simple and descriptive. The bibliography is extensive and offers many sources for the serious student. While the Red River Campaign is but a sideshow in the Civil War, its study offers valuable lessons.

MAJ William T. Bohne,
USA, Retired,
Leavenworth, Kansas

FIGHTING THE DESERT FOX:
Rommel's Campaigns in North Africa, April 1941 to August 1942, by John DeLaney, Arms & Armour Press, London, 1998, 160 pages, \$29.95.

The exploits of German Field Marshal Erwin Rommel and his renowned



Afrika Korps have long captured the interest of military historians and amateur enthusiasts. In many ways, this was the most noble theater of the war because of the absence of a significant civilian population, occasional chivalry on both sides and exciting sweeps of armored formations against North Africa's exotic backdrop. John DeLaney argues convincingly, although not flawlessly, that there is more to be learned about this important campaign.

Monographs dealing with the subject have generally focused on either British success or Rommel's abilities. DeLaney takes a different tack, focusing on the time of weakest Allied performance, suggesting that under a debilitating succession of commanders, the British were largely unsuccessful against Rommel because of poor command structure and tactical leadership. The various British commanders never capitalized on his weakest area—logistics—until British General Bernard Montgomery took command of the British 8th Army in August 1942 and implemented a cautious, deliberate war of attrition.

DeLaney does not gloss over British or German weaknesses but devotes great attention to deficiencies during this often-neglected period. Each of the book's seven chapters is an independent essay in which DeLaney analyzes Axis and Allies strengths and shortcomings as the North African Campaign unfolds. Chapter Four, "Operation 'Crusader,'" covering the only major

British success, is most insightful. Although clearly impressed with the Desert Fox's abilities, DeLaney does not spare Rommel. He rightly faults Rommel for being carried away with his own success and vastly overextending his logistic support.

Overall, the book is a welcome addition because of its novel focus on a less-than-flattering period of British military history even though the larger topic has already received extensive investigation. The book is profusely illustrated with many excellent photographs and good maps, but the missing footnotes and bibliography are serious omissions. Other minor factual errors, such as improperly identifying German Colonel General Friedrich Paulus as "von Paulus," are annoying but do not diminish the work's importance.

MAJ Kevin W. Farrell, USA,
Fort Leavenworth, Kansas

IF WAR COMES TOMORROW?

The Contours of Future Armed Conflict by General Makhmut Gareev, edited by Jacob W. Kipp, Frank Cass Publishers, Portland, OR, 1998, 182 pages, \$22.50.

Books about the future of armed conflict and the world's security environment abound. Many regurgitate old ideas with a new flair, but few propose truly innovative thoughts on the future. *If War Comes Tomorrow* by retired Russian General Makhmut Gareev, originally written in 1995 and translated into English in 1998, stands out in the context of today's global environment. It combines thoughts on the past, revolutions in technology, warfare and political structures and makes predictions worth considering.

Gareev develops his thoughts by analyzing political and military technical factors that could serve as catalysts for future conflict and necessary military reforms. He warns of two dangers that all military scholars should consider—the assumption that the development of military art is so complex that no forecast will have any true value and the tendency to turn a forecast into advocacy for a specific weapon system or military structure that then becomes an absolute. Gareev stresses that

credible forecasts must balance analysis of past military experience with contemporary radical change.

Two current, profound changes serve as catalysts for what Gareev calls radical breaks in military art. First is the transformation of the international system after the Cold War and resulting political, economic and social realignments. Second is the revolution in military affairs caused by development of advanced precision weapons, electronic warfare and information warfare, which calls for a total analysis to provide an enlightened look into the future.

Gareev believes the decline in ideology as a source of friction has been replaced by sociopolitical, economic, territorial and ethnic factors that are the new fuels of conflict. While acknowledging that the possibility of a nuclear conflict or large-scale conventional war has declined, Gareev believes small-scale regional conflicts over economic, ethnic or cultural issues could evolve into large-scale conventional conflicts. He also believes B.H. Liddell Hart's theory of indirect approach continue to hold merit. Small states will use subversive action and local wars as means to a new end. Preventing conflict and localizing problems by sanctions and international pressure take on new importance.

The book also offers insight into the future of Russia's military. Despite Russia's current political and economic troubles, the country should not be discounted in light of its ability to overcome obstacles and still make evolutionary contributions to military art.

**MAJ Sean R. Rice, USA,
Fort Leavenworth, Kansas**

TO FIGHT WITH INTREPIDITY by John Lock, Pocket Books, New York, NY, 1998, 602 pages, \$6.99.

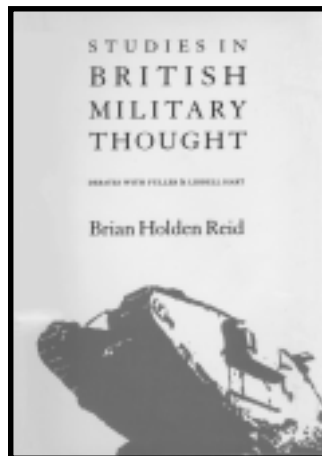
To Fight With Intrepidity is by far the best all-inclusive history of any facet of combat arms I have ever read. John Lock, a ranger-qualified US Army major, meticulously presents the entire history of the US Army Rangers in this long-awaited book, which is smartly compartmentalized, thoroughly exhaustive and

intellectually stimulating.

Lock not only chronologically describes Ranger units' actions in every conflict, he properly analyzes each. He includes numerous appendixes, describing everything from "the truth" behind Rogers Rangers' standing orders to a list of Ranger Medal of Honor winners.

Lock interviewed many Rangers who had been in Somalia and offers insight into what actually occurred there in October 1993. The book contains intriguing quotes and compelling evidence. In addition, Lock correctly describes the "modern" Rangers, beginning with the formation of Darby's Rangers.

**MAJ Dominic J. Caracillo,
USA, Fort Benning, Georgia**



STUDIES IN BRITISH MILITARY THOUGHT: Debates with Fuller and Liddell Hart by Brian Holden Reid, University of Nebraska Press, Lincoln, NE, 1998, 287 pages, \$50.00.

In *Studies in British Military Thought*, distinguished British military scholar and professor of war studies Brian Holden Reid surveys the writings of J.F.C. Fuller and B.H. Liddell Hart. The collection of 12 essays incorporates feedback gained from military professionals Reid met while teaching at British and US staff colleges.

Reid says one gains an accurate "appreciation tempered by criticism" of these "true pioneers" who examined many "complex and fascinating connections between strategy, op-

erational art and tactics within their broader study of war as a social and political phenomenon." Reid also suggests that Fuller and Liddell Hart's ideas and efforts to develop new systems, organizations and doctrine are especially relevant today as the Army attempts to exploit the ongoing revolution in military affairs.

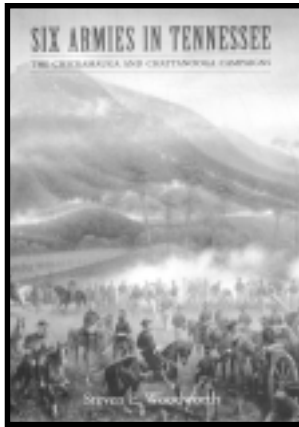
To explain Fuller and Liddell Hart's ideas, Reid concentrates on their concept of strategic paralysis—the enemy's dislocation and demoralization in lieu of his physical destruction, now called maneuver warfare. Reid portrays Fuller as being focused on the tactical and operational levels of war but shows how both thinkers struggled with the paradox of mechanization; the increase in offensive mobility brought about a decrease in defensive protection, if the enemy's command was capable. Thus, maneuver warfare turns into attrition warfare: they are two sides of the same coin.

The "supreme importance of technology" resonates today. Mechanization helps armies penetrate and attack the enemy's rear. But, mechanization also helps armies counterattack against that penetration's exposed flanks. Information-Age technology, dominant battlespace knowledge and advanced weapon systems help armies penetrate and attack throughout the depth of the entire theater with some technological vulnerability but less overall risk. Indeed, Reid reveals that the four operational concepts in *Joint Vision 2010*—dominant maneuver, precision engagement, full dimensional protection and focused logistics—have historical origins in Fuller and Liddell Hart's works.

Studies in British Military Thought is a valuable assessment, incorporating current concepts of the operational level of war. Fuller writes: "Technology could accentuate a capacity to destroy military organization on one side while protecting it on the other. Accordingly, morale would be strongest in the best equipped and protected armies and weakest in the more vulnerable." The improved ability to dislocate and de-

moralize the enemy—that is, create strategic paralysis—makes maneuver warfare a feasible and preferable alternative to attrition warfare.

**MAJ M.W. Johnson, USA,
Fort Leavenworth, Kansas**



SIX ARMIES IN TENNESSEE: The Chickamauga and Chattanooga Campaigns by Steven E. Woodworth, University of Nebraska Press, Lincoln, NE, 1998, 257 pages, \$29.95.

Although military historians have written extensively on the battles of Chickamauga, Lookout Mountain and Missionary Ridge in Tennessee, a study of the entire campaign has been missing. Steven E. Woodworth fills this void but with a work that compresses these significant campaigns into too few pages. Some words on how important eastern Tennessee was to President Abraham Lincoln and how the operations fit into the overall Union strategy would have been helpful.

Woodworth is correct in his view that military actions from June through early December 1863 were one continuous operation. Confederate General Braxton Bragg's Army of Tennessee was in defensive positions near Tullahoma in June, but by mid-December they were retreating toward Atlanta. After his victory at Chickamauga, Bragg lost at Chattanooga, and a Union force occupied Knoxville. In consequence, Tennessee was lost to the Confederacy.

Historians Glenn Tucker and Peter Cozzens provide excellent descriptions and analyses of the Battle

of Chickamauga. Wiley Sword and James McDonough do the same for the battles around Chattanooga. What has been lacking is an analysis of Tullahoma.

Most historians paint Bragg as an argumentative, unpopular, inept general who owed his position to Confederate President Jefferson Davis. Woodworth takes a more sympathetic approach. While he places some well-deserved blame on Bragg, he also emphasizes his officers' ineptitude, jealousy and outright disobedience. The fiasco at McLemore's Cove, where the Confederates missed an opportunity to bag a Union division, and Leonidas Polk's flawed attacks were a direct result of subordinate generals failing to carry out explicit orders.

The book's most frustrating shortcoming is the lack of maps. Woodworth devotes considerable space to describing roads, creeks and bridges, but there is no specific map. The general map of the area does not identify the locations or movements the text mentions.

Despite its faults, the book highlights a neglected area of the campaign. The book's preface proclaims: "The road to Atlanta—and to Durham Station—began at Chattanooga." I disagree. The book proves that the road actually began at Tullahoma.

**LTC Richard L. Kiper,
US Army, Retired,
Leavenworth, Kansas**

APOCALYPSE THEN: American Intellectuals and the Vietnam War, 1954-1975, by Robert R. Tomes, New York University Press, NY, 1998, 293 pages, \$50.00.

Robert R. Tomes, historian and associate dean, St. John's University, New York City, uses Joseph Conrad's thoughts on imperialism from *Heart of Darkness* (Penguin Great Books, New York, 1999, \$8.95) as a metaphor for the US misadventure in Southeast Asia. Like the novelist examining the imperial impulse, the historian views the Vietnam episode as culturally consuming and intellectually comprehensive—an all-encompassing experience.

In six chapters, Tomes quickly describes the American liberal, political and intellectual consensus surrounding Vietnam-era policy and delineates the way it fractured at cru-

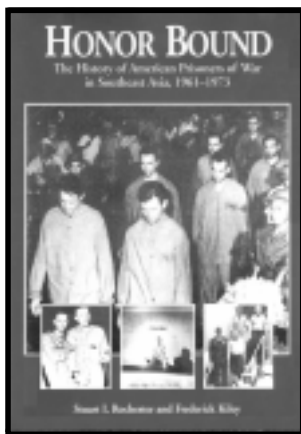


cial points. He characterizes the liberal consensus through the mid-1960s as grouped around two shared fundamental tenets: civil libertarianism and international anticommunism. Although different individuals disagreed in their emphasis of the two fundamental principles, all shared them. They saw themselves as moderates in a dangerous world.

Tomes examines evolving ideas, presented in various opinion journals of the period, as foci because they established positions around which thinkers gathered. He also shows clearly how the liberal consensus shattered; how the memory of the optimism, confidence and arrogance that led to Vietnam has faded; and how difficult it is to explain that history to younger generations.

The book illuminates an interesting period in contemporary US history and sets the breakdown of the liberal Cold War consensus firmly in the context of the Vietnam War. Tomes shows the power of intellectuals' ideas and ideals in US policy and history, who considered ideas and ideals greater than themselves and acted accordingly.

**Lewis Bernstein, Combined Arms Center History Office,
Fort Leavenworth, Kansas**



HONOR BOUND: The History of American Prisoners of War in Southeast Asia, 1961-1973, by Stuart I. Rochester and Frederick Kiley, US Naval Institute Press, Annapolis, MD, 1999, 704 pages, \$38.95.

To describe *Honor Bound* as comprehensive fails to do Stuart I. Rochester and Frederick Kiley justice. This surprising book compels hyperbole. The authors deliver a first-rate account of not only US prisoners of war experiences but of all allied and western civilian prisoners held by the North Vietnamese, the Viet Cong and the Pathet Lao as well as those held by various factions in Cambodia.

Rochester and Kiley are meticulous and objective; however, unlike the authors of many official histories, they do not succumb to institutional bias. They reveal Department of Defense (DOD) bureaucratic foolishness and the cynical use of prisoners as propaganda while also recounting the outrageous treatment prisoners received from the North Vietnamese and their allies.

Early DOD policy stipulated that prisoners were to be called “detainees” in order to avoid playing into the hands of North Vietnamese who described captured Americans as rogues and criminals. The United States changed the policy only as the number of prisoners increased and as outrage by the prisoners’ families mounted.

The authors also clearly and concisely demonstrate the vastly different experiences of prisoners depending on their age, experience, location of capture and time of im-

prisonment. From the outset, with varying degrees of success and sophistication, the North Vietnamese attempted to use the prisoners as political weapons. They were never really interested in gleaning intelligence; they wanted political statements. Physical abuse, isolation, starvation, bribes and lies were North Vietnamese tools.

For their part, the prisoners developed their own chain of command and clung to the military Code of Conduct. Most realized they were still at war, however helpless they were. In the north, where there were the largest number of prisoners, the prisoner chain of command and the ability to fight back were most robust. However, even in the smallest enclave, prisoners tried to do what they believed was right. Rochester and Kiley tell the story brilliantly, revealing a campaign years in duration fought by men and a few women whose achievements are remarkable and largely unknown.

The care Rochester and Kiley take to remain objective and dispassionate in telling the story serves to highlight the criminal behavior of the North Vietnamese and their allies. More perturbing still is the conduct of those who opposed the war and made the prisoners’ lot worse by aiding and abetting their jailers. Jerry Ruben, Jane Fonda and their ilk come off just as they deserve.

Honor Bound is a first-rate history of heroes in this sad US political and military experience. Those unfortunates, captives in the hands of Stalinist jailers who had no regard for the conventions of war or fundamental humanity, served bravely under the most difficult conditions. A few crossed over to the enemy, but most were brave and demonstrated courage and compassion of heroic proportions.

COL Gregory Fontenot,
US Army, Retired,
Lansing, Kansas

BLACK HAWK DOWN: A Story of Modern War by Mark Bowden, Atlantic Monthly Press, New York, NY, 1999, 386 pages, \$24.00.

Black Hawk Down tells the full story of the gunfight in Mogadishu,

Somalia, that erupted in October 1993 after a Ranger-supported Delta Force “grab” of several of warlord Mohammad Farrah Aidid’s top men.

Mark Bowden’s account is action-packed, fast-paced and well written as when he describes how “half the city of Mogadishu was massing and closing in on them. Men would dart out into the street and shoot off bursts from their AKs and then take cover. He could see the telltale flash and puff of RPGs being launched their way. . . . One of the Black Hawks flew over and Eversmann stood and stretched his long arm in the direction of the fire. He watched the crew chief in back sitting behind his minigun and then saw the gun spout lines of flame at targets up the street and, for a short time, all shooting from that direction stopped. That’s our guys.”

Bowden focuses on combat, but does not neglect forward support: “Kowaleski’s left arm was gone. One of the Air Force nurses would find it, to her horror, in his pants pocket where Specialist Hand had placed it.” Bowden interjects Somali characters and points of view in just the right places and ways. For instance, one local wonders, “Who were these Americans who rained fire and death on them, who came to feed them but then had started killing? From where he sat, Abokoi could see the mob descend on the Americans. He saw his neighbors hack at the bodies of the Americans with knives and begin to pull at their limbs. Then he saw people running and parading with parts of the Americans’ bodies.”

Beyond the shooting but within the natural story line, Bowden provides several valuable lessons that will apply in similar missions and comparable environments. Operational trends and near- to long-term projections clearly indicate that many larger-scale commitments of US land forces in the next decade will be in similar places—failed or failing states in the third world. Similar peace operations in a semipermissive environment will likewise include the potential for short but intense combat action and involve comparable issues—religious, ethnic and other rivalries mixed with signifi-

cant or overwhelming humanitarian concerns.

Tactical-level lessons from the gunfight range from the obvious (do not leave your night-vision devices behind just because your plan is to complete the mission during daylight) to the obscure (carefully choose and mix your combat load for a variety of targets—special 5.56-millimeter ammunition that can go right through a man and leave him standing and fighting).

Bowden shows the face of urban warfare in women and children who voluntarily help the enemy or are forcibly used by cowards as living shields. Ground combat veterans who served in Vietnam, Korea and World War II know that enemy combatants will use noncombatants and the decency of the average US soldier to their advantage.

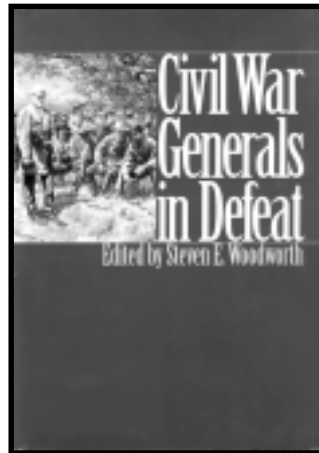
Unfortunately, the raw human courage on both sides was tainted by early breakdowns in soldier discipline: “No one had told him that Delta had moved to that space, but, then again, it was a cardinal sin to shoot before identifying a target.... He heard a sergeant major from the 10th Mountain Division telling his men before they left, ‘This is for real. You shoot at anything,’ and clearly these guys had taken him seriously.”

Bowden critiques operational-level decisions in Mogadishu including excessive information on the battlefield, well-intentioned but often inappropriate rules of engagement and simplistically choosing sides in complex civil strife. One key operational lesson for the future is that low-tech mass can effectively counter US high technology in certain conditions—RPGs took down two Black Hawks and totally disabled two others. One key national strategic lesson for the future is knowing the differences between vital national interests essential to our national survival, security or well-being; compelling or important national interests; worthy endeavors that are not essential national interests; and employing military power accordingly.

Black Hawk Down is a story of modern war. Bowden tells it well and accurately and provides 24 pages of

documentation and commentary. His account is dramatic, thoughtful and insightful.

LTC Kenneth H. Pritchard,
USAR, Retired, Lusby, Maryland



CIVIL WAR GENERALS IN DEFEAT edited by Steven E. Woodworth, University Press of Kansas, Lawrence, KS, 1999, 238 pages, \$29.95.

In the seven essays in *Civil War Generals in Defeat*, Steven E. Woodworth focuses on why prominent Civil War generals were not victorious. He examines such well-known and controversial Civil War figures as Confederate Generals Robert E. Lee, Albert Sidney Johnston, George B. McClellan, Don Carlos Buell, Braxton Bragg, John C. Pemberton and Joseph Hooker. Each essay provides numerous conclusions serving to discount revisionist historical findings and to add to each general's true character.

Woodworth bucks the historical trend of focusing on victors. Each essay discusses the losing general's leadership style, its relevance to subordinate leaders and its integration into the military background of each general's command. The essays not only explore the lost battle but the effects the loss had within the Civil War. Aside from the controversial findings, the contributors superbly display the ironies of warfare and the military structure itself that helped lead to each general's eventual defeat or ruin. Unfortunately, no maps or diagrams support the many references to details about campaigns

and individual battles.

Woodworth has a strong historical background, making him a credible editor of such a compilation. He twice won the Fletcher Pratt Award for his books *Davis and Lee at War* (University Press of Kansas, Lawrence, 1995, \$29.95) and *Jefferson Davis and His Generals* (University Press of Kansas, 1992, \$14.95).

MAJ Frank Zachar, USA
*School of Advanced
Military Studies,
Fort Leavenworth, Kansas*

THE ALAMO: An illustrated History by Edwin P. Hoyt, Taylor Publishing Company, Dallas, TX, 1999, 208 pages, \$28.95.

It was a small and unimportant battle—a military blunder. It decided nothing. Yet, it decided everything. When the last shot was fired on 6 March 1836, all 183 defenders of the fortified Spanish mission—the Alamo—at San Antonio de Bexar lay dead. The victor, Mexican General Antonio de Lopez de Santa Anna, had crushed one more rebellious obstacle to his absolute rule.

“Remember the Alamo!” became a rallying cry, a call to arms and eventually, a battle cry for hundreds of Texans (persons born in Texas), Texians (Texas colonists), Tejanos (persons born in Mexico who lived in Texas) and Americans who wanted to avenge the deaths of the Alamo's heroic defenders. In the end, at the Battle of San Jacinto, Santa Anna lost the war, and the Republic of Texas became an independent nation.

Edwin P. Hoyt describes how and why the crumbling, indefensible mission came to be defended rather than destroyed and abandoned as ordained. Within days of arriving at the mission and seeing that some improvements had been made, Colonel James Bowie decided it could be defended. His decision contradicted General Sam Houston's Fabian strategy of harrying the much larger and better equipped Mexican Army while avoiding pitched battles or being “shut up in forts” and wiped out. The Mexican Army was modeled on

Napoleonic lines and fought best in open terrain. Houston's army could not equal the Mexican cavalry, which could "sweep through level ground like a scythe." Houston wanted to weaken the Mexican Army by drawing it further from its supply bases.

In this concise yet comprehensive history, Hoyt is at his best when describing battle scenes. He graphically describes the brutal fighting and "legendary defense of the mission by a small band of larger-than-life heroes." Hoyt is an expert historian and accomplished journalist; his writing is clear and direct, and his analysis is always insightful, sometimes startling.

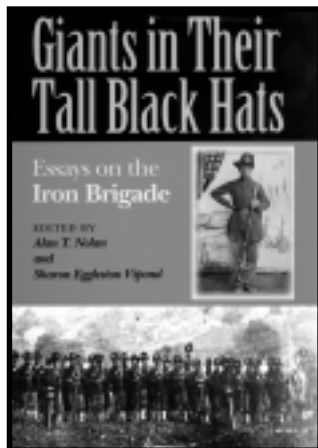
Twenty-five biographical sidebars complement the main text. The book also includes over 120 black-and-white and color period illustrations of the people, places, battles, dates, weapons, maps, terminology and personal accounts from letters and diaries. This background gives the reader a candid, often controversial but illuminating, perspective of events even though the text and illustrations are highly partisan and patriotic, reflecting the Texas viewpoint.

MAJ Glenn E. Gutting,
Louisiana Army National Guard,
New Orleans, Louisiana

GIANTS IN THEIR TALL BLACK HATS: Essays on the Iron Brigade, edited by Alan T. Nolan and Sharon Eggleston Vipond, University of Indiana Press, Bloomington, IN, 1998, 320 pages, \$27.95.

No regiment in the Union Army compiled a more distinguished record than did the "Black Hat Brigade," the only all-Western brigade in the Army of the Potomac. Composed of Wisconsin and Indiana volunteers, the Iron Brigade was arguably the best combat brigade in the Union Army until decimated at Gettysburg. According to one historian who analyzed Civil War casualty rates, in proportion to its numbers the brigade "sustained the heaviest loss of any in the war."

Editors Alan Nolan and Sharon Eggleston Vipond's insightful es-



says provide fresh perspectives on the Iron Brigade's exploits, detailing military and political events in the words of actual combatants. John Gibbon, a Regular Army officer, epitomized the Iron Brigade. He instilled pride and discipline in the ranks and gave the brigade its distinctive feature—the black Hardee hat of the regulars—that became the brigade's badge of honor. Unfortunately, none of Gibbon's successors, brave men all, matched the fiery West Pointer in the rank and file's admiration and affection. By the time he left to assume division command, he had fashioned a superb fighting force that stood "like iron" on several battlefields.

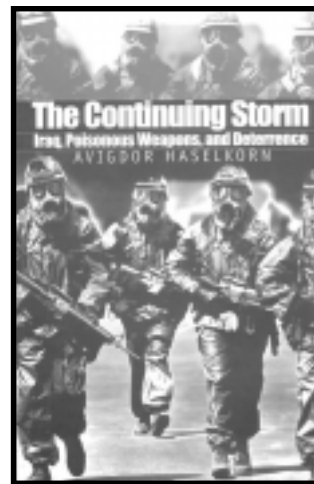
Gibbon's immediate successor, John F. Reynolds, commanded the respect of his soldiers, but he never developed Gibbon's knack for handling volunteers. Only after the horrific Gettysburg battle did his name appear in soldiers' letters and diaries. To the survivors, Gettysburg became "the grand epic of the American Civil War and the 'gallant Reynolds' the symbolic fallen knight of the Union."

COL Cole C. Kingseed, USA,
West Point, New York

THE CONTINUING STORM: Iraq, Poisonous Weapons, and Deterrence by Avigdor Haselkorn, Yale University Press, New Haven, CT, 1999, 398 pages, \$30.00.

In *The Continuing Storm: Iraq, Poisonous Weapons, and Deter-*

rence, Avigdor Haselkorn says that Iraqi weapons of mass destruction, specifically chemical and biological (CB) weapons, played a significant, if not determining, role in President George Bush's decision to "prematurely" end the Gulf War. Haselkorn argues that this political decision—in the strategic sense—while seemingly unilateral in nature, was actually a product of Saddam Hussein's strategy of "terrorist deterrence"—the adoption of extremist means designed to convey to an enemy a de-



termination to go to any length to win a battle. Though Haselkorn's thesis concerns ending the Gulf War, his critical analysis questions US strategic policy, planning and decision making from the conflict's outset. This critical analysis, with resultant conclusions and implications for future US strategy, makes this book important and thought-provoking.

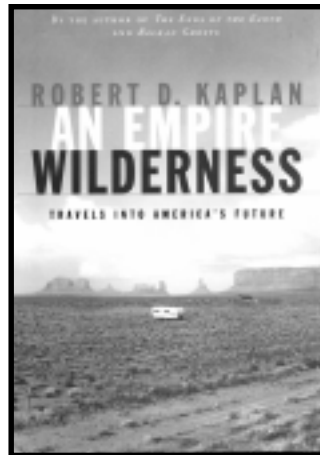
Haselkorn examines the Iraqi CB threat in detail and speculates on Saddam's strategic calculations concerning their employment. His analysis of Hussein's strategy of terrorist deterrence is compelling. He contends that Iraq's 25 February 1991 launch of an *al-Hijarah* SCUD missile armed with a concrete warhead, aimed at the Dimona nuclear reactor in Israel was a signal of Saddam's ability and intent to employ CB weapons as well as a continued attempt to draw Israel into the war. He

also suggests that the relative success of the US campaign, coupled with the uncertainty of the CB threat and the corresponding Israeli reaction, were compelling factors in Bush's decision to end the war.

With the specter of Iraqi CB weapons prominently in the minds of US leaders, how was Bush able to reach his decision to go to war? Haselkorn contends that the decision was apparently based on four assumptions: that US warnings would be effective in deterring Saddam from using CB weapons; that Bush could trust US intelligence capabilities for an accurate assessment of the CB threat; that he could rely on the air campaign to neutralize the Iraqi threat of mass destruction attacks and SSMS; and that if Iraq used CB weapons against US troops, casualties would be minimal. Had Bush had an accurate assessment of these assumptions and the risks involved, it is questionable whether he would have made the decision to attack.

While masterfully documented, Haselkorn's analysis relies heavily on inference, deduction and conjecture. As more information becomes available, some of these conclusions may be challenged because they inherently color the work as a historical account. However, the strategist works in the world of imperfect information, and as such, the work is a compelling analysis and commentary on US strategic planning.

**MAJ Chris P. Gehler, USA,
Fort Leavenworth, Kansas**



Africa's economic and environmental devastation, the Middle East's fundamentalists hotbeds and the Balkans' culture wars. Extrapolating the future, he paints a bleak picture of coming anarchy in his best-selling books *Balkan Ghosts: A Journey Through History* (Vintage Books, New York, 1994, \$13.00) and *The Ends of the Earth: From Togo to Turkmenistan, from Iran to Cambodia, a Journey to the Frontiers of Anarchy* (Vintage Books, New York, 1997, \$15.00). This time, Kaplan relates a somewhat more benign odyssey through the modern American frontier. Beginning in almost the geographic center of the contiguous United States—the unassuming city of Leavenworth, Kansas—he travels westward from the Mississippi River parallel to the route of the historic Oregon and Santa Fe trails.

His opposing epigraphs regard-

ing the Roman Empire at the beginning of the book introduce a dichotomy that is the essence of his thesis: North America has not escaped the turbulent forces reshaping the rest of the world and must either adapt or be consumed by them. He sees three primary forces at work: globalism, the rise of cultural identity over nationalism and the ascendance of economic interests. Cities, even in middle America, have become more internationally populated and more globally connected, reducing the federal government's hegemony.

Those who can keep up with rapidly changing technology and niche economies will prosper, while mass-production industries and blue-collar workers linked to them will be overrun by Asian and Latin American labor. People will migrate back into the cities as they recognize the benefits of population density and instant access, while suburbia will languish. The national geography, much like the American southwest, will be characterized by prosperous island cities surrounded by an "empire wilderness." America will ultimately divide into a caste culture with gradations from the rich—aware and empowered—to the poor—ignorant and disenfranchised.

North America's future—prosperity or apocalypse—depends on which of the two ends of the cultural spectrum predominates. Kaplan's supporting arguments are convincing for both possible outcomes. The

AN EMPIRE WILDERNESS by Robert D. Kaplan, Random House, New York, NY, 1998, 196 pages, \$27.50.

Robert Kaplan has visited more than 70 countries in his lifetime. Gifted with a keen eye for detail and macroscopic vision, he builds a coherent model of the world and the dynamics shaping its future from myriad data points of individual observations. His books are part travelogue and part prophecy.

In previous works, he chronicles his journeys through western

CGSC Notes *continued from back cover*

Terrorism presentation in Lawrence, Kansas, on 17 April, for an audience of national and international chiefs of police and FBI representatives. The topic will address military liaison capabilities.

On 2 March, LTC Carl E. Fischer conducted a class on the military operations other than war (MOOTW) analysis model for the 22d Air Mo-

bility Wing, McConnell Air Force Base, Wichita, Kansas. The class introduced a deductive model that can be used to better prepare a unit for deployment. The Wing requested the class upon its designation as Lead Mobility Wing for the Air Force for Humanitarian Operations.

POC is Major Bob Finn, Operations, (913) 684-2536.

problem with his thesis, however, is that he argues both sides at the same time. This book departs from others in the futurist genre in that it fails to make a firm prediction. It is valuable for its fresh perspectives and thought-provoking ideas but leaves prophecy of the future to the reader.

**LCDR Todd A. Kiefer, USN,
Oak Harbor, Washington**

**FIGHTING FOR THE FUTURE:
Will America Triumph?** by Ralph Peters, Stackpole Books, Mechanicsburg, PA, 1999, 224 pages, \$19.95.

In *Fighting for the Future: Will America Triumph?* controversial military strategist Ralph Peters claims that US political and military leaders are ignoring the nation's most probable threats and are unprepared for the brutal realities of future

conflict. He asks, "Shall we dominate the earth for the good of humankind? Or will we risk the enslavement of our country and our civilization?" He argues that only a strong, fundamentally reformed national defense will prepare the US mentally or materially for the coming decades' violence.

Peters advocates that the military stop its current expensive upgrades to existing weapon systems and focus on meeting the requirements of emerging threats, including the emergence of a new warrior class of warlords, terrorists, international criminals and the militaries of failing states undeterred by US technological superiority. He claims the future battlefield will be the bloody street-to-street warfare for which the US is ill-prepared.

Preaching his message with the

self-confidence of an evangelist, Peters provides a compelling, fascinating and insightful vision. His views are confrontational but breathtakingly relevant in their cold realism. While his US-centric focus is unashamedly tinged with cultural elitism, he challenges the popular ethic and provides a fresh perspective on future warfare.

Peters, a retired military officer, has extensive experience in the world's troubled regions, which gives his work authenticity. He is a frequent commentator on military and strategic issues in *The Wall Street Journal*, *The Washington Post*, *Newsweek*, *Army Times* and *The Los Angeles Times*. He is also the best-selling author of eight novels.

**MAJ Gregory P. Walters, USA,
Victoria Barracks, Australia**

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CGSC

Notes

Former Joint Chiefs Chairman Honored

Former Chairman of the Joint Chiefs of Staff General Colin Powell, Retired, became the 81st person inducted into the Fort Leavenworth Hall of Fame on 23 February 2000 during a ceremony at Bell Hall's Marshall Auditorium. Established in 1970, the Fort Leavenworth Hall of Fame recognizes outstanding leaders who served at Fort Leavenworth and have contributed to the achievement, tradition or history of the US Army.

Powell's connection to Fort Leavenworth began with his graduation from the US Army Command and General Staff College (CGSC) in 1968. He also served as the deputy commanding general of the Combined Arms Combat Developments Activity from 1982 to 1983.

During his acceptance speech, Powell reflected on his 35-year military career and how fortunate he felt to have fulfilled his earliest ambition—not to become the chairman of the Joint Chiefs of Staff—but to be a US soldier. It was to his fellow soldiers—particularly CGSC students—that Powell addressed his closing remarks. "I hope that 32 years from now, when you perhaps come back here . . . the memories will flood in. The memories will grab your heart—the memories of a pleasant time and wonderful place that means so much to . . . our way of life. I hope that you will think fondly of all those who came before you and all those who came [as] warriors of a nation. Remember that the nation is counting on you, and remember above all that you are the warriors of the nation and that the nation has put [its] trust in you. And I know that you will be worthy of that trust."

In addition to his post as Joint Chiefs chairman, Powell held many other positions, including White House Fellow, senior military assistant to the deputy secretary of defense and assistant to the president for national security affairs, a post he held until January 1989.

His numerous awards include the Defense Distinguished Medal, Army Distinguished Service Medal, Defense Superior Service Medal, Soldier's Medal, Bronze Star Medal and Purple Heart.

In October 1989, Powell became the youngest officer, the first African American and the first ROTC graduate to become chairman of the Joint Chiefs of Staff. During his four-year tenure, Powell oversaw 28 crises in-

cluding Operation *Desert Storm*.

Powell has continued to serve his country after retiring in 1993, serving on the board of several nonprofit organizations, including the Board of Governors of the Boys and Girls Clubs of America, the Board of Trustees of Howard University, the Advisory Board of the Children's Health Fund and the Board of Directors of the United Negro College Fund.

Powell's many civilian awards, which honor his public



SPC Christopher J. Durphy, US Army

service, include two awards of the Presidential Medal of Freedom, the President's Citizens Medal, the Congressional Gold Medal and the Secretary of State Distinguished Service Medal.

Editor's note: Adapted from an article that appeared in the Fort Leavenworth Lamp.

DJMO

Jim Willbanks, Joint Operations Division and CGSC Civilian Instructor of the Year, AY 1999-2000, recently presented a paper titled "US Advisors, 1969-1973: Vietnamizing the War" at the the Kansas City Chamber of Commerce.

LTC Billy Blackwell will conduct a Domestic

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Command and General Staff College