ARMOR

Urban Fighting in Lebanon *See Page 8*

PB 17-00-4 ***July-August 2000***

Saddle Up... Tonight We Ride

It's 0600 hours, dark, early, and the commander is tired and groggy — Stand To. A crying child approaches, fever raging. The commander, the spouse of a deployed tanker or cavalryman, initiates an all-too-familiar battle drill — the emergency room. Moving quickly she wakes, dresses herself and four children, preps a snow and ice-laden vehicle, and crosses the LD. As she nears the objective, one child sprays windshield de-icier into the eyes of his brother. Calmly she instructs the spraying victim to, "Hang tight, we are almost at the hospital." While comforting the child with the fever, driving the car, and applying her makeup, she settles another border dispute between siblings before sliding into the hospital's icy parking lot. Her actions at the objective are a marvel of efficiency: she conducts an informal triage with the emergency room staff, settles kids into activities, and begins planning for Class I. And you thought qualifying a tank or conducting a zone recon was tough.

Not long ago I glanced down at my calendar to discover that May 12 was not only a Friday but also Military Spouse's Day. Not sure where I got the information or what inspired me to annotate it, I announced the day's significance to the magazine's staff and drew little response. What actions are required on Military Spouse's Day — a gift, flowers, or is there some sort of ritual or festival involved? Ignorance is not always bliss.

It's getting difficult to track the plethora of recognition days and months. Honestly, how many of you knew 12 May was Military Spouse's Day, and for those of you who did (both of you), what did you do to honor your spouse? My course of action was simple: do nothing and hope (normally not a method). Declaring a day "Military Spouse's Day" as a means to check the block and recognize this outstanding group is a gross injustice — they have earned and deserve much more.

The wives of mounted soldiers have a history as long and storied as their husbands. Over a hundred years ago, wives waved goodbye to cavalrymen on western frontiers, and today they do the same, bidding farewell to tankers and cavalrymen off to Kosovo, Bosnia, SW Asia, and Korea. We slink out the door for TDYs and deployments confident that our spouses will keep the home fires burning, visiting emergency rooms, battling TRICARE, fixing the car, taking care of the lawn while raising our children.

We ask a great deal of our wives; we ask them to leave family and friends to follow us; we ask them to relocate every two or three years, and endure the destruction of their treasured belongings by movers contracted at the lowest bid; and we require them to run our home during long work hours and frequent separations. These are special women indeed, so *ARMOR* will take a moment to both salute and thank the wives of the men of the mounted force — thanks very much, ladies. I for one will do better next year.

We think you'll find an eclectic collection of articles in this issue of *ARMOR.* In an interesting bit of timing that coincides with recent events in the Middle East, we chose CPT James Leaf's article on the Israel approach to MOUT in the 1982 Lebanon campaign for our cover. This is the season for Annual Training and we feature two pieces on the National Guard and Reserve which attempt to answer the questions: "What to Make of National Guard Tankers?" and "Can the One Team Concept Mean One Equal Team?". Also, a defining moment approaches for the Interim Brigade, as the Platform Selection Process will soon designate a vehicle for the mobile gun system, and CPT Francis Park makes a case for a second look at the Armored Gun System.

— D2

By Order of the Secretary of the Army:

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General, United States Army
Chief of Staff

Official:

JOEL B. HUDSON
Administrative Assistant to the
Secretary of the Army

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LETTERS

The May-June 2000 issue marked a new milestone for ARMOR with the first electronic submission of the magazine to our contract printer. Of course, as some of you may have noticed, it was not a totally smooth transition. Because of a font compatibility issue between our equipment and the printer's, we had a problem with some of our quotation marks and long dashes. We apologize for any inconvenience to our authors and readers. – Ed.

IBCT "Armored Car" Acquisition Squanders Millions in Research Money

Dear Sir:

As I read the "Commander's Hatch" of the March-April 2000 issue, I am disturbed by the "…Chief of Staff of the Army's decision to field an initial Brigade Combat Team at Fort Lewis." There is an obvious flaw in the pursuit of an *interim* fighting vehicle for the initial brigade combat team.

Of course, *future* technology will permit us to develop a combat platform with greater firepower and protection while being lighter, more reliable, faster, etc., than the M1A2 SEP Abrams. Any historic reading of science and technology suggests nothing else. Working with Army Materiel Command and using the Mounted Maneuver Battle Lab along with virtual prototypes and fighting them on virtual terrain is exactly the way the development process is supposed to work. We'd be foolish to do otherwise. Even hosting a performance demonstration at Fort Knox to survey the capabilities of "off-the-shelf" platforms made some sense. I contend that it could have been achieved by simply reviewing commercially published reference books, but if the "boss" needs to touch and feel before deciding, fine.

However, I cannot comprehend the statement, "We are going to learn a great deal from this fielding and apply those lessons toward the development of the future combat platform that will have the characteristics already mentioned."

What lessons? We are already ignoring nearly a century's worth of armored and mechanized combat experience when we opt for light armored cars in lieu of main battle tanks. We can develop and practice any new tactics with existing tanks, armored fighting vehicles, armored personnel carriers, and tactical wheeled vehicles. By buying these interim armored cars now, we are simply squandering millions in procurement money that should be spent for the future technology once it becomes available.

Let us not fool ourselves. The rationale behind this "charge to lightness" is a perceived lack of competence in deploying and logistically supporting and sustaining heavy forces. If we send tankers and troopers into combat in thin-skinned, under-armored, under-gunned, and road-bound wheeled vehicles, it is because leadership is focused on tactics instead of logistics, and shame on us. But before we face the grieving parents, I'd hope that we could at least articulate a compelling reason to justify the expenditure. Somehow, the urgency of "doing it on my watch" falls rather short.

CHESTER A. KOJRO
LTC, AR, USAR (Ret.)

Main Battle Tank Rankings: More Perspective Was Needed

Dear Sir:

Although being pleased to read and very agreeable with Herr Klenke's letter (Jan-Feb 2000 issue) concerning the "ranking" of the world's MBTs, I would comment on three specific aspects: the ranking concept itself, a country's MBT selection, and the application or use of such a report.

Main battle tanks must be designed to, and be measured by, a fixed set of standard performance characteristics — frequently referred to as the "...ilities." These range from survivability, lethality, mobility, maintainability, durability, transportability, etc., etc. Each of these performance characteristics, in turn, is affected by vehicle weight, fuel load, ammo types, sights, etc. These are normally weighted by the designer as to priority or importance. While some of these characteristics were broadly mentioned, it seemed to be, as was pointed out in his questioning of the low Merkava rating, more subjectively than objectively. Therefore, since power-to-weight ratio only affects mainly one minor determinant of mobility (acceleration), of only one measurable "...ility, " does this really move an MBT "ranking" from say a 5 to a 10?

Herr Klenke briefly mentions the purchase of one MBT over another by a non-MBT designing/producing country. While he suggests that such decisions are additionally determined by business arrangements such as offsets, there is the allusion that the Leo 2 was compared to and outperformed the "M1A1/M1A2" in the Netherlands, Switzerland, and Sweden. In actuality, the first two countries made their Leo 2 purchases in March 1979 and August 1983, respectively — well before the 120mm M1A1 was available.

Lastly, as a member of the Armor Association since 1972, and having previously seen the full text of the original tank "ranking" thesis, I was initially somewhat disappointed to see it published in an abbreviated context, and without greater editorial comment. But the purpose of *ARMOR* Magazine is "...to surface controversy and debate among professionals in the force," and the scope of your readership is proof of success. And the professionals know that events like Desert Storm prove our tanks' success.

J. C. HARP
Utica, Mich.

Close Look Shows Merkava's Pluses and Minuses

Dear Sir:

"What's the best tank in the world?" My Yankee impulses prompt me to vote unhesitatingly for the M1A2 Systems Enhanced Package, the most advanced main battle tank of the U.S. fleet. I am not at all surprised at the level of response, however, to the relative rankings of tanks compared in the July-August 1999 issue of *ARMOR.* Beauty contests like this always seem to rankle someone. If you do not believe me take a look at the discussion, also in this forum, over what are the best all-time tanker movies or the fuss created when VH-1 selected the top 100 rock and roll songs of all time.

I am particularly not surprised at the wave of defenders who rose up to argue that the Israeli Merkava III was wholly undeserving of its bottom ranking. I agree. Having said that, I am not sure where it should be ranked, but certainly not dead last. I was sufficiently impressed with it during my two-year tour as the TRADOC Liaison to the Israeli Defense Forces to tell folks that, if pressed, I would rate it just after the Abrams and the German Leopard II. To caveat that judgment, I should say that it is based on what I know, and there is a lot I do not, especially with regard to classified data such as armor composition etc. In fairness, I should also note that my tour of duty was 1995-1997. In terms of technical innovations, that could be considered an eon ago. At that time, the Merkava IV, with its more powerful engine, was a prototype. There is one thing I will say with confidence and that is this: the Merkava is the best tank in the world available to the Israelis. It was designed based on the IDF's combat experiences and for the conditions of its most probable conventional battlefield, the Golan Heights.

I will not recount the arguments of either the Merkava's champions or detractors. I will, however, offer a few first-hand observations. Some affirm while others counter the accolades afforded the Merkava III by LTC Eshel, IDF Retired, in the last issue of *ARMOR.* I owe much to LTC Eshel; his works were a great source of information prior to my LNO assignment. I can't say, however, that I have ever read a critical word in any of them and I note that his publications are almost invariably reviewed by the IDF Spokesman's Office. He is an Israeli patriot. That is not a bad thing, just worth noting. Many of us, in our Army, have been brought up on admiring accounts of the IDF — they literally could do no wrong. My tour with the IDF sobered me of this notion. I realized that they were every bit as challenged by resources, bureaucracy, and the tendency to be captive to one's own experience, however real that experience may be, as any other nation and army.

I had the good fortune to observe, ride, and fire several IDF tank variants in various field

conditions. I was able to tour the Merkava's production facilities hosted by MG (Ret.) Israel Tal, a man who stands among the giants in armored warfare history and who is the driving force behind the design and production of the tank. Finally, I was present at exercises in which USMC M1A1 tankers trained alongside a Merkava III tank platoon.

First, I would like to randomly note some of the more "nifty" attributes of the Merkava and IDF tank design that I have not seen printed here as yet. The Merkava III was designed with survivability as priority #1. No surprise then, it is a supremely survivable tank. Its modular armor is easily replaced and selectively upgraded. The laser early warning devices that LTC Eshel described are, in fact, terrific survivability enhancers. The Merkava III has a simple, but highly effective suspension system. It provides a smooth firing platform. Additionally, it is cleverly designed so that its components provide additional survivability, especially against chemical (energy) rounds. A combined arms concept is integral to the tank's design. The tank has space for six dismounts in the rear of the hull. It has an integrated 60mm mortar; a design common to most IDF tank variants. It has a reduced thermal signature, at least in comparison to the Abrams. This is due, in part, to the manner in which exhaust is channeled from the front-mounted engine. The gunner and TC may fire the coaxial machine gun simultaneously with or separate from the main gun. The computer solution is for the main gun, however, which may make for some erratic machine gun fire when fired simultaneously. IDF tank variants have separate daylight and thermal sights. The thermal image is very high quality although I believe Israelis train less with it than we do and discourage its use except when limited visibility requires it. There is a "TV" sight that allows an impressively broad and clear view outside the tank from within the turret. In the event of intercom loss, the TC can pass instructions to the driver using simple indicator lights to include speed up/down, turn right/left, and reverse. The automatic target tracker works as advertised, I watched a Merkava destroy a drone helicopter in flight at a simulated range of 3,000 meters. MG Tal reported that it had achieved 80-90% first round hits against moving targets at ranges in excess of 3,000 meters. The Merkava IV prototype was fitted with a much needed, more powerful 1400-hp engine of German manufacture. MG Tal claimed the tank was revolutionary versus evolutionary in design. When fielded, he said, it would look like a new tank and actually be a lighter tank. All this was not apparent from a casual observation of the prototype, but I have no reason to doubt it.

Now, I will pass a few rounds of ammo the way of the Merkava's detractors. Notwithstanding LTC Eshel's defense, the Merkava is grossly under-powered; and it accelerated slowly, especially on inclines. Our Abrams tankers easily outpaced the Merkava platoon in a road march across the desert. Second, I am not sure the Israelis have gained much in fire crew safety by going to an electric, versus hydraulic, turret. It seems that advances in lubricants and other features have mitigated the Abrams risk. What is clear, however, is the relatively slow slew rate of the Merkava turret. It took 12 seconds for full rotation. I would say 3-4 times longer than that of the Abrams. The Merkava's main gun rounds are in the rear of the hull in 49 separate canisters, a design meant to eliminate secondary explosions. This presents two problems. One, having dismounts on board is a trade-off. They occupy the same space as the removable canisters. Two, except for ready rounds in the turret, the main gun must be forward positioned to access the hull ammunition.

Finally, while I was impressed with the "BAZ" auto-tracking fire control system, I was not overly so. At the time I served in Israel, the IDF tank corps held an annual competition for the best tank platoon representing each of its regular army tank brigades. The IDF M60 Patton tank variants were always competitive with the Merkava. In fact, in one of my two years, the oldest M60 variant beat out all others, to include the Merkava III tank platoon. This says something about the crew and training, but it also diminishes, if only a little, my estimation of the Merkava III. I have no doubt, whatsoever, that the advance represented by the 2nd generation FLIR on the M1A2 SEP will do more to revolutionize lethality than any automatic target tracker ever can.

I must conclude by restating my admiration for the Merkava III. The fact that a young and resource-poor nation like Israel could build a revolutionary tank product line is an amazing feat in itself. There is no equal in SWA, save the Abrams tank, to the Merkava tank, and that is enough. I am not a technical expert and so I am unable to speak that language with the authority of a well researched individual like LTC Eshel, nor am I smart enough to program the computer inputs to obtain tank comparisons like the study that ignited all this discussion. I am, however, confident in the accuracy of what my eyes observe and what my simple brain, trained to assess training, concludes.

MAJ KEVIN WRIGHT
Former LNO to the IDF
HQ, USAARMC
Fort Knox, Ky.

(The Editor is declaring a unilateral cease-fire on further comments about the tank ranking survey article in our July-August 1999 issue. – Ed.)

A "Regimental System" of Sorts Thrives in the National Guard

Dear Sir:

The article by COL Guy C. Swan III ("It's Time for a True Regimental System" *ARMOR,* March-April 2000) is squarely on target. It raises many issues that go straight to the heart of the morale and combat readiness of our Army. As a National Guard officer, I would like to bring the perspective of my own National Guard service to the table.

One of the true strengths of National Guard units, especially combat arms battalions, is that they are *de facto* organized more like traditional regiments than any other units in the Army. Citizen-soldiers in these battalions often serve their entire careers in a single battalion. Noncommissioned officers have literally "grown-up" with their unit and feel personally responsible for its success. Senior noncommissioned officers are often respected members of their communities and bring a wealth of human and institutional knowledge to their military jobs, which would be impossible to match in units made up of soldiers in constant transition. Many National Guard soldiers enjoy the unique feeling of camaraderie that arises from serving with friends, neighbors, and even family members. Career progression and the need for varied experiences dictate that officers be periodically reassigned to other companies or batteries within the battalion. However, most officers serve for long periods of their career within the same battalion or brigade. This gives National Guard officers a similar sense of camaraderie as that enjoyed by enlisted soldiers. I can personally attest that in trying times the unique camaraderie, the feeling of being a respected member in a "band of brothers," is what has kept me in uniform. This mutual reliance and trust can only translate into superior unit cohesiveness and enhanced combat power. I should add that the system is not impermeable. People sometimes relocate for personal reasons or because of their civilian careers. But this "natural" attrition coupled with retirements and occasional reassignments outside the battalion or brigade keep the units from becoming too ingrown and stale.

Another intangible morale-builder is the sense of history maintained by National Guard units. The flags of the two infantry battalions and one artillery battalion in which I have been privileged to serve have been literally covered by campaign streamers ranging from the Civil War to World War II. Many soldiers recall when their fathers, grandfathers, or uncles served in the very units in which they now serve. Frequently, mementos of the hometown unit's war service, such as captured cannon or public memorials, are prominently displayed at town squares or local museums.

All these positive points do not mean that there are no problems in the system. Yes, there are cases of cronyism, the proverbial "good ol' boy" networking, and cases where sub-standard, or problem soldiers are retained or tossed from one company to another. But, in my experience, these have been few and far between. In addition, the constant enforcement of "the Army standard" in all things, from the APFT to battle drills to

the staff Military Decision Making Process (MDMP), has served as an objective quality control tool that has served to increase the professionalism of units immeasurably. Another, subtler, quality control measure is the genuine desire of the overwhelming majority of soldiers to live up to the highest traditions of their battalion/regiment and not "lose face" amongst one's peers. This internal motivation is often far more powerful than any external coercion because once an officer or NCO loses the respect of his/her regimental peers he or she loses all moral authority.

Again, I applaud COL Swan for raising a much-needed and often unwanted or unheeded voice on behalf of the need to substitute the Army's faceless individual replacement system for a working regimental system. From my perspective, I would like to see the National Guard leadership officially solidifying and cementing the traditions of our regimental system. Furthermore, I invite my Active Component (AC) colleagues to dialogue with members of the National Guard on our experiences with our "regimental" system. The "lessons learned" from these experiences may well benefit the morale and combat effectiveness of the Total Army.

MAJ PRISCO R. HERNANDEZ, ARNG
4th Bde, 75th Div (TS)
Ft. Sill, Okla.

New Sensor System Will Be Fielded in Greater Numbers

Dear Sir:

I would like to set the record straight and clarify some misconceptions in the article "Reconnaissance and Security Forces in the New Heavy Division Structure" Pages 26-29 in the March-April 2000 issue written by Major Michael C. Kasales.

He mistakenly reported the current fielding schedule for the LRAS3, or Long-Range Advance Surveillance System, as one per scout platoon. The correct fielding rate is one per scout platform in each mech infantry/armor battalion scout platoon. Instead of a scout platoon only receiving one LRAS3 per platoon there will be a total of six per platoon (one per platform).

The LRAS3 is a superb sensor and will give scouts a great advantage on the battlefield.

SSG DANIEL R. GASTELUM
Directorate of Force Development, Ft. Knox
LRAS3 Project NCOIC

Starry Also Attempted Personnel Reform on His Watch

Dear Sir:

My compliments to First Lieutenant Martin J. D'Amato's article "Vigilant Warrior: General Donn A. Starry's AirLand Battle and How it Changed the Army," in the May-June 2000 issue of *ARMOR.* His article is well written and researched. I must add — and I emphasize I am not correcting Lieutenant D'Amato's article — that Starry attempted more than a revolution of the Army with doctrinal, technological, and educational reforms. He also attempted to evolve the latter three institutions that compose the Army with dramatic changes in the personnel system.... It was a system that Starry stated was an "anachronism," and the last remaining Army institution that needed to be "fixed."

Starry was doing this as he had done with doctrine: he brought smart people in, gave them a mission-style order with a clear end state, and continually checked it. Unfortunately for the Army, the personnel system was the one institution that was so entrenched that even the energy and brilliance of Donn Starry could not penetrate it.... By the end of the 1970s, and in the beginning of 1980s, the Army, led by Chief of Staff General "Shy" Meyer, began extensive studies to implement a unit-based personnel system.... The first study was conducted at TRADOC under the direction of General Starry. The second one was conducted with the guidance of General Meyer by the Inspector General, Lieutenant General Richard Trefry.

(Starry's) proposal was a copy of a European regimental system adapted for the United States, but the latter program attempted to establish a smaller program within the larger, individual-focused personnel system, and as a result was doomed to failure. Starry opposed this compromise, but the bureaucracy ground him down.... Upon assuming command of TRADOC in 1979, General Starry began examining ways to implement a regimental system and replace the individual personnel system with a unit replacement system. He asked liaison officers from the United Kingdom and Canada to undertake a detailed study of their countries' systems and suggest how these could be incorporated in the U.S. Army. After a year of extensive study, the Allied officers — Lieutenant Colonel P.W. Faith of the British Army and Lieutenant Colonel R. I. Ross of the Canadian Army — returned with an excellent regimental plan for the U.S. Army called the "Application of the Regimental System to the United States Army's Combat Arms," referred to as the TRADOC Faith/Ross Study.... This proposal was a true regimental system that involved more than rotating units: it concentrated on unit cohesion, with all its inherent complexities of recruiting, sustaining, training, personnel policies, and tradition.

The TRADOC Faith/Ross study suggested a grouping of regiments from all combat arms by state, or states. Each grouping had to ensure a minimum population base of five million supporting four regiments. A more detailed study would have been required to adjust the base figure to national recruiting trends. The regimental system would create an image of the regiment that could not fail to improve community and public relations for the whole Army.... The authors suggested that regiments could actively recruit only within their own areas and should supply recruiting personnel as part of the U.S. Army Recruiting Command in these regions. In each region, the regimental headquarters would be established and colonels of regiments would be authorized. The study did support the current, centralized recruit training system.

The study emphasized the adoption of the regimental system, which makes the regional basing of units more significant. If building regiments with a strong tradition and a sense of history is important, regional recruiting or regional defense districts should be considered. Otherwise, regimental pride and association with a specific headquarters are not important in a system with nationwide recruiting and where units are arbitrarily headquartered.

The proposed regimental system would also have a strong tie to the Army National Guard and Army Reserve, where regiments, brigades, and divisions have been linked to regions for years. Specific units have operated in specific areas for over a hundred years. (The 29th Infantry Division, which served proudly in World War II, is composed of units from Virginia and Maryland and can trace its origin to the Civil War. The three regiments of the Massachusetts Army National Guard have existed since 13 December 1636.)

Under TRADOC Faith/Ross the entire personnel system warranted reform. Management practices would become more regimentally oriented for both promotion and posting of enlisted soldiers. The TRADOC Faith/Ross study recommended the elimination of the "up-or-out" promotion system, to be replaced with an "up-or-stay" promotion system for both the officer and enlisted ranks. This promotion system would be decentralized, with more trust being placed in the hands of the regimental commander.

The TRADOC Faith/Ross study recommended that regimental commanders should play an important role in selecting enlisted personnel for assignments away from the regiment, such as serving on higher staffs, recruiting, or as an instructor at a branch school. Increased personal attention to individuals in a decentralized system would lead to better retention rates, and foster an atmosphere where the best individual, not the best file, would be promoted.

Finally, the TRADOC Faith/Ross plan addressed officer management interwoven with the regimental system, instead of separate from it. Like the enlisted promotion system, it recommended abolishing the "up-or-out" promotion system because of its disruption of cohesion. It also stated that "up-or-out" created a lack of experienced officers by constantly moving them from one position to

Continued on Page 54

Major General B. B. Bell
Commanding General
U.S. Army Armor Center

Getting There From Here: The Mechanized Force Modernization Plan

The Army, and our mechanized force in particular, face a modernization/ transformation program that is unprecedented in history. Meeting the challenges to America's national interests demands a robust set of land power options to face the uncertain operational environment of the 21st century. Decreased in size since the Persian Gulf War, the U.S. Army remains the premier land force in the world today and plays a pivotal role in carrying out the national security strategy. Despite the Army's preeminence, our leadership has recognized the need to transform the force to meet new challenges in a world that continues to change.

None of this should be news to any of you. The Army vision has been widely disseminated. We at the Armor Center fully embrace the vision. We have not, however, openly discussed the means by which the Army intends to achieve transformation of our current force into the Objective Force. In the previous issue of *ARMOR,* I gave you a due-out on the Mechanized Force Modernization Plan (MFMP). The MFMP is intended to be the bridge from today's legacy force and the Objective Force. The MFMP will provide the strategic framework to synchronize mechanized force modernization with Army transformation, as well as the investment strategies to achieve both.

For the past five months, a TRADOC formal Integrated Concept Team, under the direction of BG James J. Grazioplene, the Armor Center's Deputy Commanding General, has been working to identify the way ahead for the mounted force. The ICT developed a strategic framework, proposed a modernization plan in the context of the Army transformation, and laid out the way forward. This was a significant undertaking, and was accomplished only because we had the full participation of each schoolhouse, TRADOC, and the Army staff.

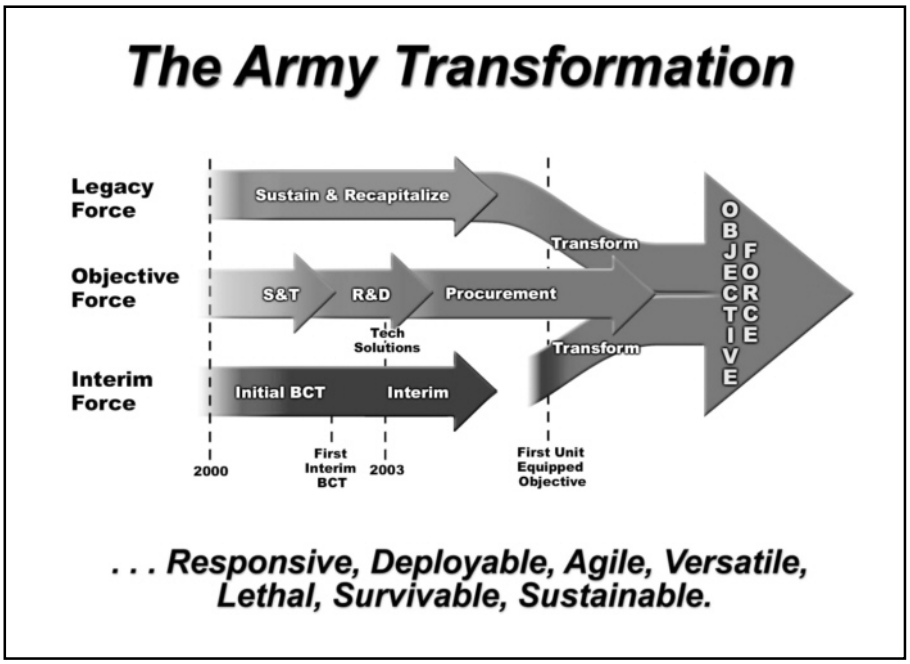
Army Transformation and Modernization Strategy. The Army leadership, with our Armor and Cavalry forces at the core, is pursuing "a strategically responsive force that is dominant across the full spectrum of operations." The goals are lofty. Strategic responsiveness is defined as being able to deploy a combat-ready brigade anywhere in the world in 96 hours, a full division in 120 hours, and five divisions in 30 days. In today's terms, full spectrum dominance at every point on the spectrum of operations requires leveraging capabilities that are resident in uniquely specialized parts of today's force (light forces must be deployed to meet time standards for responsiveness and heavy forces must be deployed to meet the dominant overmatch standard in most METT-T conditions). The Army has embarked on a transformation campaign that will enable its organizations and equipment to better meet both requirements.

At the heart of the Army's Force Modernization Vision is a new kind of force that combines the lethality, survivability, and tactical agility of the heavy forces with the responsiveness, deployability, sustainability, and flexibility of lighter forces. This modernization strategy has three key tenets:

- Transform now to interim capability in order to meet immediate war-fighting requirements, particularly in small-scale contingencies.
- Maintain legacy war-fighting capability through overmatch, digitization, and re-capitalization as a strategic hedge while the Army undergoes the turbulence of modernization and transformation.
- Focus science and technology to enable timely fielding of the Objective Force.

The long-term goal is to field an Objective Force that harnesses technological advances in a Future Combat System (FCS) that is lighter, more strategically and tactically mobile, and that requires less sustainment, yet offers the relative combat overmatch capabilities in lethality and survivability that heavy forces enjoy today.

Realization of that goal could eliminate the sharp distinction we now see between heavy and light forces. But until the Objective Force and the Future Combat System are realities, the Army must maintain both the dominant combat overmatch the legacy force offers, and the capability to employ deployable interim forces to fight wars. To do so, it must retain a legacy force of the right numbers of heavy platforms and organizations, modernize or re-capitalize them, and continue to product-



improve them to counter the most dangerous threats to the nation's freedom of action and well being.

The Role of Heavy Forces in Transformation. Transforming selected brigades to interim capabilities will resolve many of the challenges facing the Army today, but heavy forces will still be required during transformation. No other component of the force provides the capabilities that they bring, particularly to the higher end of the spectrum of conflict. They represent the indisputable hammer for Army offensive and counter-offensive operations. Until their capabilities can be replaced, today's heavy forces are the nation's insurance policy for deterring major theater wars and, should deterrence fail, provide the dominant land force for winning them, decisively and quickly. This makes them a vital part of the strategic hedge required to mitigate risk in the Army Transformation Campaign Plan.

The most recent genesis of the MFMP was the Army's submission of an initial Armored Systems Modernization Report (ASMR) to Congress in 1999. A resulting element of that change was in the number of vehicle systems and the methodology the Army uses to field these systems. For example, the tank fleet in 1990 was sized at over 13,000 platforms, while ASMR specified a requirement of 7,640 in 1999 and an end state of 5,526 platforms. The Army has also moved from fielding individual systems to fielding a system of systems, focusing on unit capabilities rather than platform capabilities.

Mechanized Force Modernization Plan (MFMP). In light of evolving goals and objectives, the modernization plan for the entire mechanized force is undergoing significant revision, affecting all maneuver, maneuver support, and maneuver sustainment elements. The MFMP examines the threat faced by the heavy force, identifies warfighting requirements (from the Army Universal Task List or AUTL) for meeting the threat and key programs that must be preserved, and codifies issues where lack of overmatch or vulnerabilities will place U.S. forces and interests at risk. The plan recommends adjustments to the requirements laid out in the original ASMR, studies changes in assumptions and requirements, and presents a program that allows transformation of the Army to the Objective Force through recommended solutions in the areas of Doctrine, Training, Leader Development, Organizations, Materiel and Soldier issues (DTLOMS).

The Mechanized Force Modernization Plan:

- Proposes adjustments to the heavy force (M1, M2, and M3) modernization programs consistent with acceptable levels of risk in order to preserve resources to the Future Combat System (FCS) Research, Development, Testing, and Evaluation (RDT&E) effort.
- Identifies prudent risk in recommending appropriate levels for our armored forces in the FYDP commensurate with transformation and refinement of AC / RC roles and missions.
- Proposes and assesses reductions in selected "out of position" Army Prepositioned Sets (APS) commensurate with the Transformation Strategy and Joint Strategic Capabilities Plan (JSCP), as another means of conserving resources and posturing our strategic response capability.
- Assesses adequacy of current programs to provide a suitable platform for scouts and recommends a way ahead. Pays particular attention to lethality and survivability requirements.
- Integrates ARNG divisions and Enhanced Separate Brigades (ESBs) into the modernization strategy commensurate with RC re-missioning and new roles.
- Assesses Army efforts to produce the Tank Extended Range Munition (TERM) and other critical munitions required to sustain lethality overmatch through ammunition development to ensure superiority against Threat protection and survivability technologies, such as explosive reactive armor (ERA) and Active Protection Systems (APS).
- Assesses requirements and alternative solutions for command and control (C2) on the move. Also, recommends and assesses solutions to address the inability to negotiate complex obstacles and gaps on the battlefield due to recent resource decisions affecting Grizzly and Wolverine.
- Assesses re-capitalization efforts throughout the force in order to reduce overall Operational and Support (O&S) costs and assures legacy equipment remains fit to fight.
- Assesses mounted force training strategy and requirements.

The Mechanized Force Modernization Plan provides a blueprint to ensure the United States maintains the combat overmatch that will deter its enemies from acting contrary to its interests and, should deterrence fail, ensures victory in defense of U.S. national interests. The central role of Fort Knox and the Armor Center in this effort provides assurances that the lethal and decisive nature of mounted combat, along with the *elan* and *esprit-de-corps* for which our branch is renowned, will be imbedded in the Objective Force, as well as in the "battle wagon" our future Armor and Cavalry Warriors will ride into combat.

FORGE THE THUNDERBOLT… AND STRIKE FIRST!

MOUT and the 1982 Lebanon Campaign: The Israeli Approach

by Captain James D. Leaf

MOUT (Military Operations in Urban Terrain) is a topic much discussed currently within the profession of arms. The growing consensus is that U.S. forces can expect to conduct MOUT routinely in future operations, though there are still a few who doubt this.[1] Some analysts go so far as to predict that MOUT will dominate future operations.[2]

Whatever the future holds, MOUT will be of increasing importance in future U.S operations. Analysis of past urban battles, therefore, is required. Humans have fought in cites since before Joshua and the Israelites breached Jericho's walls. Cities are important, to people, governments and, therefore, armies. Americans have been fighting in or over cities since the revolution, and examining U.S. operations since the early 1980s reveals MOUT to be a significant component of each operation.[3] The future structure of the Army, as envisioned by the Chief of Staff of the Army, Gen. Shinseki, ensures that operating in urban terrain will be a common aspect of operations. The force envisioned will operate as a CONUS-based, technologically advanced, rapidly deployable force. It would most likely deploy to airfields, ports or both. This trend is already underway.[4] These facilities, with rare exceptions, are located in cities. Soldiers and their leaders should realize the changing status of urban terrain. No longer something to be avoided or entered reluctantly, urban terrain will be like any other, possessing unique characteristics and requiring some specialized approaches, but no longer considered any more unusual than desert or other more "traditional terrain."

The Israeli Defense Force (IDF) 1982 Lebanese campaign is a historical example relevant to the U.S. Army. This campaign pitted a mechanized, technologically advanced, casualty sensitive First World army against conventional and unconventional opponents in a media-saturated, Third World urban environment.

Early versions of the Israeli Merkava tank were used in the Lebanon invasion.

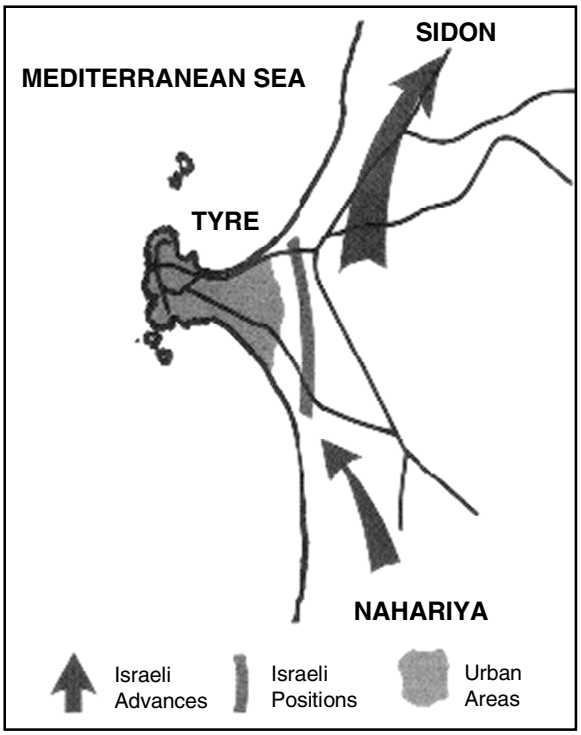
Throughout the campaign, the IDF faced a paradox: move rapidly through urban and mountainous terrain to conform to a political timeline, yet inflict minimal casualties, minimize collateral damage, and sustain few casualties.[5] These constraints affected how the IDF would conduct the campaign and especially MOUT. Attrition battles like Manila or Aachen would not be possible.[6] To achieve its objectives within the parameters, the Israelis would use a combination of surprise, mass, and tactical flexibility. Generally, this approach proved successful.

In this campaign, the IDF fought the PLO (Palestinian Liberation Organization) and the Syrian Army. The PLO was a well-financed and armed guerrilla organization. It was equipped with a variety of Western and Soviet Bloc small arms, anti-tank weapons, and various artillery pieces, mortars, and even a few aging tanks. The Syrian Army was a relatively modern, Third World army equipped with Soviet equipment. The IDF's goal was to drive the PLO out of Lebanon and neutralize Syria's influence in Lebanon. To accomplish this, nine heavy (tank and mechanized infantry) IDF divisions would advance into Lebanon.[7] These units would move rapidly. The advance elements would bypass resistance and follow-on forces would reduce bypassed enemy strongpoints. In the course of this drive north, the IDF would fight in three significant urban areas: Tyre, Sidon, and Beirut.

The first major urban battle of the campaign was in Tyre. (See Map 1) Located on a narrow peninsula, Tyre is a densely populated coastal city in southern Lebanon ringed on the east with PLO camps, considered the most likely location of PLO resistance.

The camps and the close proximity to Israel made Tyre a certain objective of the IDF. Though lasting less than two days, it illuminated how IDF MOUT tactics evolved.

An entire division attacked Tyre, surrounding it on the first day of battle. Attacking on multiple axes in conjunction with an amphibious landing; the PLO defenders were rapidly overwhelmed. Most fell back in disorder offering limited resistance, and what remained was located in the PLO camps. With Tyre surrounded, the IDF



Map 1

The Israeli advance on the coastal city of Tyre, Lebanon.

would clear the PLO camps slowly and systematically.

The few remaining PLO positions would be cut off and reduced using infantry, direct fires from tanks and self-propelled artillery, indirect fires, naval gun fire and CAS (close air support). Fires would be discriminate, targeting specific enemy locations, limiting collateral damage and civilian loss of life.

Despite the rapid seizure of Tyre, the IDF encountered problems as it moved into the built-up areas. Initially, the infantry advanced mounted in M113 APCs, in order to keep up the pace of the advance. PLO AT (anti-tank) teams ambushed a paratroop battalion south of Tyre, wreaking havoc in the unit and the timetable. Soon IDF infantry would only move dismounted in urban areas; APCs were quickly relegated to support roles. They would ferry supplies to forward units but not venture close to elements in contact.

This was not the only factor that slowed the advance. In Tyre, Israeli civil affairs and PSYOPS were ineffective. Before moving into the city, leaflets and loudspeakers announced any impending IDF advance and advised inhabitants to move to the beaches to avoid fighting. Despite this, the IDF made no provisions for caring for the refugees or controlling their movement. Thirty thousand refugees left the city, only to return to it days later.[8] These movements clogged the roads, slowing the IDF advance and providing cover for withdrawing PLO forces. The urban areas and the restrictive ROE (Rules of Engagement) governing their clearing meant a slow, deliberate pace. This was at odds with the politically-necessitated rapid maneuver campaign. MOUT precludes rapidity. The PLO would exploit this. In one instance, the crowds welcoming IDF forces into their village, were in fact concealing a PLO ambush. Due partly to the impact of the civilians, the PLO fighters in Tyre escaped the IDF to fight another day.

Sidon was the next major urban area the IDF encountered. (See Map 2) A large coastal city, Sidon was the capital of south Lebanon and the PLO regional headquarters. Like Tyre, heavy fighting had taken place in Sidon during the 1976 Lebanese civil war. The PLO had inflicted heavy casualties upon attacking Syrian forces attempting to seize Sidon and, in response, the Syrians razed much of the Palestinian inhabited areas. Neither outcome was feasible for the Israelis.

The IDF would use similar tactics as it used in Tyre except on a larger scale. Instead of one division, three converged on Sidon with one conducting a division-size amphibious landing north of the city. Sidon and the nearby PLO camps were attacked from three directions and rapidly surrounded. Once this was accomplished, a slow and deliberate clearing of each was conducted. Enemy positions were further subdivided and reduced using direct and indirect fires. This method spared most areas from potential destruction.

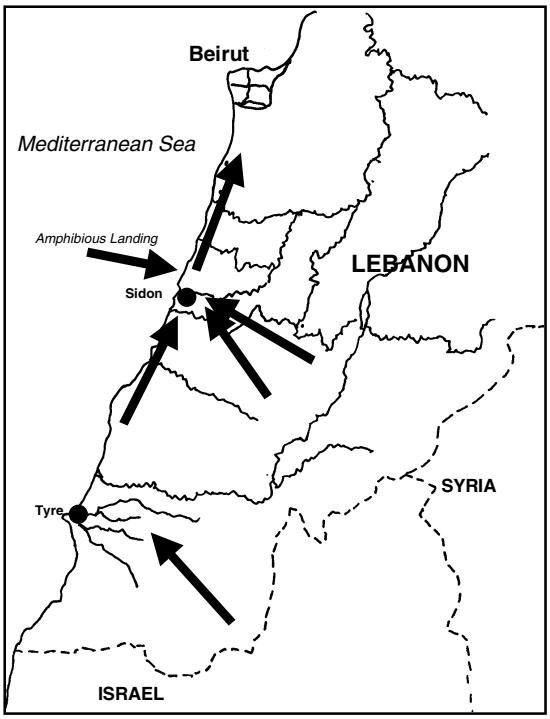
PLO defenses were similarly disorganized and piecemeal in Sidon as in Tyre. Unlike Tyre, PLO resistance when it did occur was fierce. Ambushes occurred along the coastal road south of the city. Civilians were again used to mask PLO movement and positions.

These actions slowed the IDF advance and increased the intensity of the fighting. IDF attacks into Sidon would be slow and deliberate. Despite the IDF's reputation as being a tank-oriented force, Sidon was a combined arms operation. Dismounted infantry led the way, backed by tanks, self-propelled artillery, combat engineers, indirect fires, and CAS. Fires were selective, targeting only known enemy areas. In Sidon, smoke was used extensively for the first time by the IDF. The Israelis moved slowly, block by block, through the narrow streets and alleys of the old city. In two days, the city was cleared, without a single IDF soldier killed. One casualty was the timetable. Unable to move faster due to concerns for civilian and friendly casualties, as well as clogged roads, the IDF resorted to using helicopters to move forces north of the city.

The PLO camps slowed the advance. While Sidon may have been secured, the defenders in the camps dug in.[9] The Israelis adapted to this change in PLO tactics. Unlike in the city, when the IDF went into the camps around Sidon, the tanks led the way.[10] Despite the narrow congested camp streets being potential AT ambush kill zones, the IDF believed the tanks would be needed to break through the outer defenses.

Once inside the camps the dismounted infantry took the lead. Direct and indirect fires were used liberally in the camps to reduce PLO positions than in the cities. Despite being disorganized and lacking cohesion, the PLO held out for 5 days. Because of this, casualties and property damage were much higher than in Tyre. Additionally, the PLO stand inspired further PLO resistance.

Beirut was fought on a scale even larger than Tyre or Sidon. (See Map 3) It was large, 50 square km, with over a million inhabitants.[11] The skyline was



Map 2

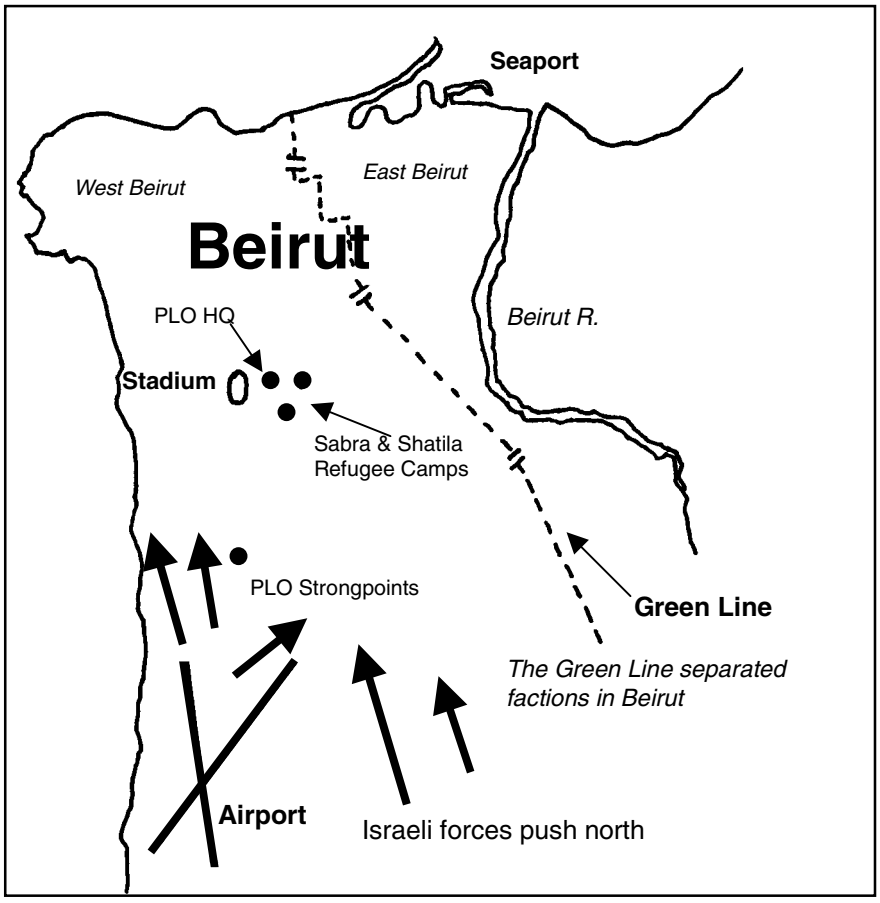
The Israeli advance on Sidon.

studded with modern skyscrapers. PLO forces in Beirut were the largest yet encountered, 10-15,000 plus 2-5,000 Syrian troops.[12] The IDF was faced with the daunting prospect of operating inside a large modern city against a well-armed, committed foe.

The IDF objective in Beirut was not a building-by-building fight to destroy the PLO. Instead, it was more limited: not the destruction but the withdrawal of the PLO from Lebanon. Therefore, the IDF limited the scope and duration of the ground fighting in Beirut. Firepower played a more prominent role here than earlier in the campaign. Beirut was too big to overwhelm with numbers. Actual ground fighting was limited strictly to PLO-held areas. These areas, like before, would be isolated and then thoroughly saturated by fire before any ground forces advanced. The destruction was greater than that inflicted earlier in the campaign, but the casualty-conscious IDF determined it could not afford to do otherwise.

IDF operations in Beirut lasted approximately three months. Fighting was mainly in the southern and western parts of the city. Early on, the IDF and Syrians fought for control of the main east-west route out of the city, the Beirut-Damascus highway. Once secure, the IDF had the PLO in Beirut isolated and could bring all its pressure on them. Piecemeal, limited ground attacks, led by company-sized teams of infantry; tanks and self-propelled artillery pieces were used in these operations. These so-called "salami" tactics, named because they sliced off small pieces of PLO-controlled territory, accomplished their goal of pushing the PLO into an ever-shrinking area.[13] The ground activities, combined with the most intense CAS and artillery fires of the campaign, made the PLO, after many cease-fires and negotiations, agree to leave Lebanon. The campaign was over but the IDF would remain in Lebanon. As of January 2000, the IDF continued to operate in a buffer zone along the Lebanese-Israeli border.

Though outfitted both technologically and doctrinally for high-intensity warfare in the open terrain of the Golan and the Sinai, the IDF was able to adapt to the MOUT mission of the 1982 Lebanese campaign. Despite being a heavy force, the IDF proved that such a force could operate in an urban environment. Where other armies failed, the IDF did not, due to its flexibility, adaptability, training, and small unit leadership.



Map 3

The Israeli advance on Beirut.

The vulnerability of lightly armored APCs, like this M113, in the Lebanon invasion led the IDF to develop engineer vehicles adopted from obsolete tanks as troop carriers.

The IDF experience in Lebanon's urban warrens raises vital questions for the U.S. Army. Some units in the IDF did better than others in MOUT. The difference lay in pre-invasion training. Those units that trained in some of the captured villages in the Golan and the Sinai were more prepared than those that did not. This training was conducted in small villages that were necessarily not representative of the large modern cities of Lebanon, but MOUT training can be conducted successfully in relatively modest training areas; large city-sized structures are not necessary. What matters most is for soldiers and leaders to learn the fundamentals of operating in and around structures.

Another important subject concerns the use of armor in urban areas. As stated, tanks could operate relatively safely in urban areas in conjunction with dismounted infantry. Thinner-skinned APCs were found vulnerable to AT fire and were withdrawn from fighting. To protect infantry on the move, the IDF began using armored engineer vehicles; this is a good example of IDF flexibility.[14] Other armies in similar circumstances have tried similar adaptations before.[15] Recent battles in Chechnya and Somalia amply demonstrate the danger thin-skinned vehicles face in the modern urban environment. The history of armored vehicles has shown a general trend of progressively greater and greater armor protection. With this in mind, it is worthwhile to posit whether there is any such thing anymore as "light" armored vehicles. Small, disorganized PLO AT teams savaged IDF APCs near Tyre, and Chechen rebels routinely destroy Russian armor formations. As the IDF has fought in Lebanon over the years, its infantry rides in a variety of "battle taxis" made from converted tanks.[16] Modern western armies, including the British, American, and German, have spent large sums of money and effort to equip its armies with heavily armed but lightly armored IFVs (Infantry Fighting Vehicles). The IDF, with considerably more recent combat experience deems it more prudent to favor armor over speed or firepower. Those who plan the future of the mounted force should bear this in mind.

Notes

[1]See CPT Robert L. Bateman, Review of "Fighting for the Future," *ARMOR*, September-October 1999, p. 60. CPT Bateman states the view that the oft-predicted dominance of MOUT has yet to come about.

[2]See Ralph Peters, *Fighting for the Future* in the chapter entitled, "Our Soldiers, Their Cities." Peters lays out a grim view of a future dominated by numbing, brutal urban warfare.

[3]From America's first war, the Revolution, to present-day contingencies in the Balkans, American operations have revolved around cities. Our wars may begin in the desert or the jungle but end in places like Hue and Kuwait City. For example, the memoirs of one of America's most distinguished WWII combat commanders, LTG James Gavin, were called "On to Berlin," not "On to the Central Plain."

[4]Recent operations have begun in cities and fighting continued in cities throughout the ops. Grenada began in Point Salinas airport, Panama in places like Rio Hato and Panama City. Peacekeeping operations like Haiti or Bosnia revolved around urban areas.

[5]The Palestinians, Lebanese, or Amnesty International might not agree that the Israelis were discriminate in their use of fires. The IDF was certainly more careful in their operations than the Syrians in their 1976 attack on Sidon or the destruction of the Syrian town of Hama, (See Thomas Freidman, "*From Beirut to Jerusalem*") where thousands were purposely killed. Certainly many civilians were killed during the IDF campaign in Lebanon. However, these casualties were the by-product, not the objective, of the campaign. The Serbs in Bosnia or the Russians in Chechnya or Sherman in Georgia targeted civilians specifically. The IDF went so far as to make maps listing every building in Beirut to aid in accuracy. That the IDF caused civilian casualties encapsulates the difficulty posed by MOUT for an Army that uses ROEs: fighting means death and destruction and in MOUT, one is fighting in areas inhabited by non-combatants. The Syrians, Serbs, or Russians may not experience the moral and tactical difficulties that the IDF or U.S. Army might face in an urban fight.

[6]Each lasted for weeks, killed thousands on all sides and left the respective cities little more than rubble.

[7]M. Thomas Davis, "*40 Km into Lebanon*," (National Defense University Press, Washington DC: 1987) p. 78.

[8]"*Operation Peace for Galilee*," MOUT Homepage, p. 5.

[9]R.D. McLaurin, "*Technical Manual 13-89: Battle of Sidon*," (Abbott Associates, Inc: 1989), p. 31.

[10]McLaurin, p. 31

[11]R.D. McLaurin and Paul A. Juredini, *Technical Manual 1-86: Battle of Beirut*, (U.S. Army Human Engineering Laboratory, Aberdeen Proving Ground, Aberdeen, Md.: 1986) pp. 13-14. Richard A. Gabriel, *Operation Peace for Galilee-The Israeli-PLO War in Lebanon,* (Hill and Wang, New York: 1984) pp. 47-59.

[12]McLaurin and Juredini, p. 44.

[13]"*Operation Peace for Galilee*," MOUT Homepage, p. 10.

[14]Carlo D'Este, "*Decision in Normandy*," (Harper Perennial, New York: 1983) p. 389. British Army LTG Richard O'Connor, Eighth Corps CG, experimented with mounting his infantry in armored self-propelled gun carriers when faced with a similar situation during the grim fighting in and around Caen during the Normandy campaign. The idea did not take hold, due mainly to a lack of desire by the artillery to transport infantry.

[15]LTC David Eshel, "Armored Anti-Guerilla Combat in South Lebanon" *ARMOR,* July-August 1997, pp. 26-28. The article shows that faced with the proliferation of AT systems, the IDF has increased the armor protection of its vehicles, especially older tanks and APCs.

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United Defense Photos

A Second Look at the Armored Gun System

This tracked candidate for the Medium Gun System role offers unique strengths

by Captain Francis J. H. Park

The current focus on improving the deployability of today's armor force has brought a number of systems to the forefront with the establishment of the new Interim Brigade Combat Team (IBCT) at Fort Lewis. Among the requirements for the IBCT is a medium gun system (MGS), one that would provide the brigade a highly mobile, direct fire anti-armor capability. Such a vehicle, with its specified requirement to fit inside a C-130 tactical lift aircraft, could also benefit current light infantry and airborne organizations. The development of the IBCT has brought the M8 Armored Gun System (AGS) back into consideration as a possible MGS platform — for which doctrine already exists. The capabilities of the AGS and its rapid deployability would make it an option for both the IBCT as well as traditional light infantry organizations, and it deserves a second look.

If the future of the Army is to transition light infantry divisions to something based on the IBCT or its successor, fielding a mounted gun system to the light infantry and airborne divisions would be a logical transition.

In the meantime, however, a mounted gun system, and more specifically, a revival of the light armor battalion, has utility now. Such an organization would dramatically increase the combat power of light infantry divisions, and more importantly, reintroduce further forcible entry capabilities to the airborne division.

Until 1997, the 82d Airborne Division had its own light armor battalion in the 3d Battalion (Airborne), 73d Armor. The removal of the M551A1 Sheridan (due to lack of repair parts and the age of the platform) as well as the cancellation of the AGS (then-type classified XM8) dealt the airborne division a considerable loss in its ability to perform its primary mission of forcible entry. Other anti-armor systems exist within the division, but none have the same kind of immediacy that a direct fire gun system brings into the fight.

While aviation (primarily the OH-58D Kiowa Warriors in the attack helicopter battalion and reconnaissance squadron) enjoys superior mobility, its ability to remain on station and its survivability under sustained fire are inferior to that of a light armor unit. The M966 TOW HMMWVs found in the anti-armor companies can be dropped with the initial assault force, but lack the rapid fire, ready magazine capacity, and shock effect inherent to an armored gun. Finally, the Javelin missile system, while extremely lethal, cannot be delivered with the initial assault force except as part of a door bundle or as secondary cargo on a vehicle or pallet configured for low-velocity airdrop. The Javelin command launch unit can be safely jumped in an ALICE pack. However, the missile cannot be safely jumped either as a single item of equipment or as a tandem load due to its weight.[1] None of the aforementioned systems are truly usable in the infantry support role (e.g., destroying bunkers) without quickly depleting valuable (and scarce) ammunition that may be required against a mechanized threat.

The anti-armor assets available from corps for forcible entry operations are just as limited in their utility. Corps-level attack aviation is available in the form of AH-64 Apaches, with the same limitations as divisional aviation assets. One asset available from the 3d Infantry Division (Mechanized) is the Immediate Ready Company (IRC). The IRC consists of four M1A1HC tanks, four M2A2ODS Bradleys, two M113s, and a CSS slice of HEMTTs. This capability, however, is handicapped. The IRC (which requires ten C-17 airframes to move), must airland off a C-5 or C-17. Such operations require both a secured runway (particularly so for the C-5, which requires a lengthy takeoff and landing), as well as the offload time required for the vehicles themselves.

Unfortunately, employment of the IRC overlooks three basic considerations. First, if an enemy counterattacks before the IRC can be airlanded, there is no way to introduce the IRC. In addition, if the airfield has an aircraft maximum on ground (MOG) of less than four, the time required to introduce the IRC increases dramatically.

"The powerpack can be rolled out to the rear of the vehicle using its OVE tools in five minutes. The pack can be replaced using those same tools in five minutes...."

Second, the IRC is totally unavailable in the conceivable possibility that the initial assault force needs armor just to secure the objective. Finally, the responsibility to maintain an IRC (in *FORSCOM Regulation 525-5, Alert Force Requirements and Response Standards*) also details a heavy force IRC as well. Given the amount of airlift required just to move the initial assault force as well as the IRC, not to mention the possible requirements of a heavy force during a contingency operation, the IRC may not even be available. In a worst-case scenario, light forces will need their own light armor.[2]

A detailed overview of the AGS appears in now-MAJ John Nagl's article in the July-August 1992 issue of *ARMOR,* but several points are worth highlighting in light of its utility to forces today.

One of the notable features of the AGS is that it shares commonality of components with a number of systems that are already in the inventory. From its weapons, suspension, engine, and electronics, this commonality of hardware (particularly LRUs) would also facilitate the training of soldiers in maintaining and operating the AGS. A force equipped with the AGS would be able to use the vast stocks available of M1, Bradley, M113, and HEMTT (to name a few systems) Class IX already in the inventory, which eases having to establish the stocks of Class IX parts required to sustain the system.

The AGS main gun is an XM35 low-recoil 105mm gun with autoloader. Although the 105mm APFSDS round's armor penetration is inferior to its 120mm counterpart, there are other 105mm rounds that have immediate utility on the battlefield and are not available to the 120mm gun, such as white phosphorus smoke (for marking targets as well as suppressing infantry), anti-personnel beehive, and high explosive plastic (for use as a bunker defeat/obstacle reduction munition as well as against soft-skinned vehicles). Indeed, the vertical storage of the main gun rounds in the AGS ammunition magazine allows the AGS to store and accurately fire WP, a capability that the M1, with its horizontal ammunition stowage, lacks.

One important safety feature in the AGS is a firewall splitting the turret down the center. Although the gunner can access the breech, he does so through a trap door. This automatically switches off the autoloader — eliminating the hazard of inadvertently crushing body parts. In addition, every crewman, to include the gunner, has his own hatch — an important issue when dismounting in a hurry.[3]

A preeminent safety issue for any armored vehicle, however, is survivability, and the AGS uses, notably, a tracked suspension. Paul Hornback, in his March-April 1998 article, "The Wheel Versus Track Dilemma," notes that "The primary reasons for a tracked vehicle's compactness are reduced suspension clearance, wheel turning clearance, and the absence of multiple transfer cases and drive shafts that are integral to the design of multi-wheeled vehicles."[4] In addition, tracked vehicles have the unique capability of pivot steering, a significant survivability enhancement, particularly on narrow roads or in built-up areas.

Although a wheeled chassis inherently has a faster road speed and quieter performance than its tracked counterpart, a tracked chassis is more resistant to small arms fire, as well as grenade and artillery fragments. Run-flat tires may offer some ability to "limp home" from a fight, but if a future combat force takes sustained small arms fire enroute to its objective, as the 3d Battalion, 75th Ranger Regiment encountered in Mogadishu, to "limp in" is of little benefit. The LAV-25, for example, has a range of only five miles when all eight tires are running flat, or 25 miles when four are flat.[5] This reduced capability is unacceptable in light of the length of the operations (e.g., Somalia, Bosnia) any force may have to conduct. Given the limited PLL/ASL available to a forcible entry (or the "early entry" envisaged in the IBCT mission statement)[6] operation, or the possible separation of a light division's supply trains from an initial lodgment, the ability of a system to conduct sustained combat operations becomes preeminent.

One unique feature of the AGS is the ability to accept add-on armor packages when the mission dictates the need for additional armor. The vehicle can only be dropped from a C-130 in its Level I configuration, but additional armor packages of Level II bolt-on plates and Level III reactive tiles can be mounted in theater.[7] Such improved armor packages may mean survival in an environment where RPGs and heavier belt-fed weapons may be present. RPGs used in large numbers brought down MH-60 helicopters in Somalia. Similar tactics will probably be employed against ground vehicles.

The power train of the AGS is geared towards battlefield sustainability. The AGS engine shares over 90% commonality of parts with the HEMTT family of vehicles and uses a standard Bradley Fighting Vehicle transmission. Generating 550hp using JP8 fuel, the engine delivers a higher power-to-weight ratio than the M1. The powerpack can be rolled out to the rear of the vehicle using its OVE tools in five minutes. The pack can be replaced using those same tools in five minutes.[8] The entire powerpack can be removed and replaced in an hour, and ground hopping the engine requires no disconnection of fluid lines. Not having to wait for a recovery vehicle to lift an engine out to conduct maintenance on the pack, not to mention eliminating the need for such a vehicle to arrive early, reduces

the overall airlift requirements for a force equipped with the AGS.

Like the M1A2, the AGS uses a MIL-STD-1553 data bus. This data bus is one of the standard protocols for the Army Tactical Command and Control Systems (ATCCS), among which is FBCB2 (Force XXI Battle Command Brigade and Below), the latest generation of the appliqué systems in use at Fort Hood. Any future combat vehicle will integrate FBCB2, and the IBCT draft doctrine covers FBCB2 TTPs in detail. Indeed, information management for the IBCT integrates FBCB2 throughout.

Additionally, some of the product upgrades that have been introduced for the M1A2 (particularly the improved LRUs in use with the M1A2SEP) may see some "trickle-down" to the AGS, partly due to the 1553 data bus, but also because of its view to compatibility with existing government off-the-shelf systems. For example, the AGS as originally produced uses the same TIS and laser rangefinder as the M1A1. However, the AGS can also use the greatly improved FLIR from the M1A2SEP in lieu of the original TIS, as well as the M1A2SEP eye-safe laser rangefinder (ESLR). This improvement in capabilities is tremendous, and as the M1A2SEP enters the force, its LRUs could very easily be fitted to the AGS.

Last, but certainly not least, anyone who has operated in conjunction with dismounted infantry will recognize the need for an infantry phone. The M60 series tanks had them, M1 tankers have had to jury-rig TA-1 field phones into AM-1780 amplifiers as a very imperfect substitute. The MGS requirements for an infantry phone and a 105mm gun point to the AGS as a logical choice, and the requirement to support infantry in the close fight[10] also lends itself extremely well to integrating the IBCT MGS vehicle into existing light and airborne infantry organizations.

One possible distribution of the AGS to units would be similar to the earlier employment of the light armor battalion in the 82d Airborne Division, with one light armor battalion to each light infantry or airborne division. The tremendous combat power in the air assault division's three AH-64 attack helicopter battalions obviates the need for an assault gun or light armor battalion in the forcible entry or early entry role. Further light armor battalions could be organized at corps to augment the divisional light armor battalions.

"One possible distribution of the AGS to units would be similar to the earlier employment of the light armor battalion in the 82d Airborne Division, with one light armor battalion to each light infantry or airborne division...."

These battalions would have four companies, one operating in direct support to each of the three maneuver brigades, with a fourth available as a division TCF or reserve. These companies, organized around three platoons of four AGSs, should have their own maintenance sections. Such a task organization would greatly facilitate the decentralized operations that they would conduct, a lesson learned from hard experience in 3-73 AR.

The battalion would have its own scout platoon of ten M1025/6 scout HMMWVs and a towed mortar platoon of six towed 120mm mortars. Although some may see such organizations as superfluous when the bulk of the light armor battalion operates in direct support to a light infantry brigade, such organizations also allow the battalion to conduct independent operations in support of division missions.

One other organization that would benefit from the capabilities of the AGS is, of course, the 2d Armored Cavalry Regiment (Light). Prior to the cancellation of the AGS, it was to be the regiment's primary anti-armor platform, in lieu of its TOW HMMWVs. There is little room for comparison between the AGS and the M966. Not only is the AGS more survivable (particularly in the economy of force missions the light ACR could conceivably perform), it has considerable deterrent value in peacekeeping or peace enforcement, both missions which 2ACR (L) has performed in the past.

Sheridans from 3-73 AR played key roles both in Panama and Haiti. In Panama, the 152mm main gun was devastatingly effective against walls and buildings, leveling sniper and small arms positions, and destroying armored vehicles.[11] When the 10th Mountain Division (Light Infantry) assumed peacekeeping duties in Haiti, Sheridans performed security and screening missions.[12] Fielding the AGS to 2ACR(L) would be a giant step in making the light cavalry regiment a truly effective

"The rapid deployability of the light infantry division and airborne division is all for naught if those forces lack the combat power to survive..."

force without sacrificing the deployability which sparked its inception.

As prior operations have shown, the value of a tracked gun system (compared to its wheeled counterparts) is considerable, not only in forcible entry operations, but also in the inevitable stability operations that would follow. The doctrine for such a role already exists in *FM 17-18, Light Armor Operations,* and the draft version of *FM 17-15-1, The MGS Platoon* covers operations both in conjunction with light infantry and with other light armored forces. In addition, *FM 17-15-1* covers stability operations as well as urban operations in depth.

At the personnel level, the light armor battalion would open new horizons for armor crewmen. The initial proposal for 3-73 AR was to open the battalion up to MOS 19K soldiers, giving these soldiers the opportunity to attend the basic airborne, jumpmaster, and ranger courses, professional development courses normally unavailable to those troops. In addition, cross-pollination of 19K armor soldiers to light units would be a vital first step in bridging the gap between what has ultimately become two largely separate entities, one light, the other mechanized.

The tremendous firepower of today's armored and mechanized infantry divisions is of little use if those forces are too heavy to deploy in a timely manner. Conversely, the rapid deployability of the light infantry division and airborne division is all for naught if those forces lack the combat power to survive early or undertake forcible entry operations against what could very easily be a mechanized or motorized threat. Over the long term, the introduction of these vehicles to light forces will assist in developing the kind of tactics and battle drills that the Army will need into the coming century.

Notes

[1]The missile itself does fit in the existing Dragon Missile Jump Pack, but is too heavy for most jumpers to use without causing a weak door exit, inducing either a partial or complete parachute malfunction.

[2]MAJ William D. Wunderle, *Forced In, Left Out: The Airborne Division in Future Forcible Entry Operations,* Monograph, U.S. Army Command and General Staff College School of Advanced Military Studies, First Term AY97-98, pp. 26, 29-31.

[3]John A. Nagl, "The Armored Gun System: Sheridan Replacement Offers Better Firepower Plus Worldwide Mobility," *ARMOR*, July-August 1992, p. 28.

[4]Paul Hornback, "The Wheel Versus Track Dilemma," *ARMOR*, March-April 1998, pp. 33-34.

[5]A presentation comparing wheels to tracks can be found online at *http://www.knox.army.mil/center/dfd/WVTbrf1.htm.*

[6]An IBCT overview can be found online at *http://www.knox.army.mil/center/mwfi/* under "Draft Brigade Organization."

[7]FMC Corporation (now United Defense, L.P.) , *AGS System Technical Overview,* 16-17 November 1993.

[8]Nagl, pp. 28-29.

[9]Ibid, FMC.

[10]The online IBCT overview also contains the basic requirements for the MGS.

[11]CPT Scott Womack, "The AGS in Low-Intensity Conflict: Flexibility Is the Key to Victory," *ARMOR,* March-April 1994, p. 42.

[12]Wunderle, p. 16.

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Fort Knox Opens Urban Training Site

All Photos by Robert Stevenson

A highlight of this year's Armor Conference at Fort Knox was the dedication of a new, $17.2 million "city" to train mounted warriors and their infantry counterparts. It has been named in honor of 2LT Raymond Zussman, whose heroic actions leading a tank/infantry task force in a French city in 1944 led to the award of the Medal of Honor. Following MG B. B. Bell's dedication speech, Conference attendees observed a force-on-force combat demonstration by Fort Knox's 1-16 Cavalry Regiment and 3-502 Infantry from Fort Campbell, Ky.

The 26-acre site is specifically designed to train mounted soldiers in cooperation with infantry. Special effects, developed with the cooperation of experts at MGM Studios, add to the realism with exploding gasoline pumps, cars and buildings engulfed in flames, fallen power lines, and a sewer system that permits infiltrators to maneuver underground. The buildings include a walled embassy compound, hotel, town houses, school, a fire station, churches and homes, slums, and an industrial area. A tall "water tower" is actually an observation point for trainers and exercise controllers.

Bradley crew, at left, waits by the church for the exercise to begin.

At far left, a tank moves out and infantrymen bound ahead to clear the street.

Range Chief F. L. Andrews, in baseball cap, above, welcomes Armor Conference visitors to the urban combat site. At left, he leads a tour group through some of the many buildings in the training complex, which is located about 20 miles outside the main post area near the reservation's northern boundary.

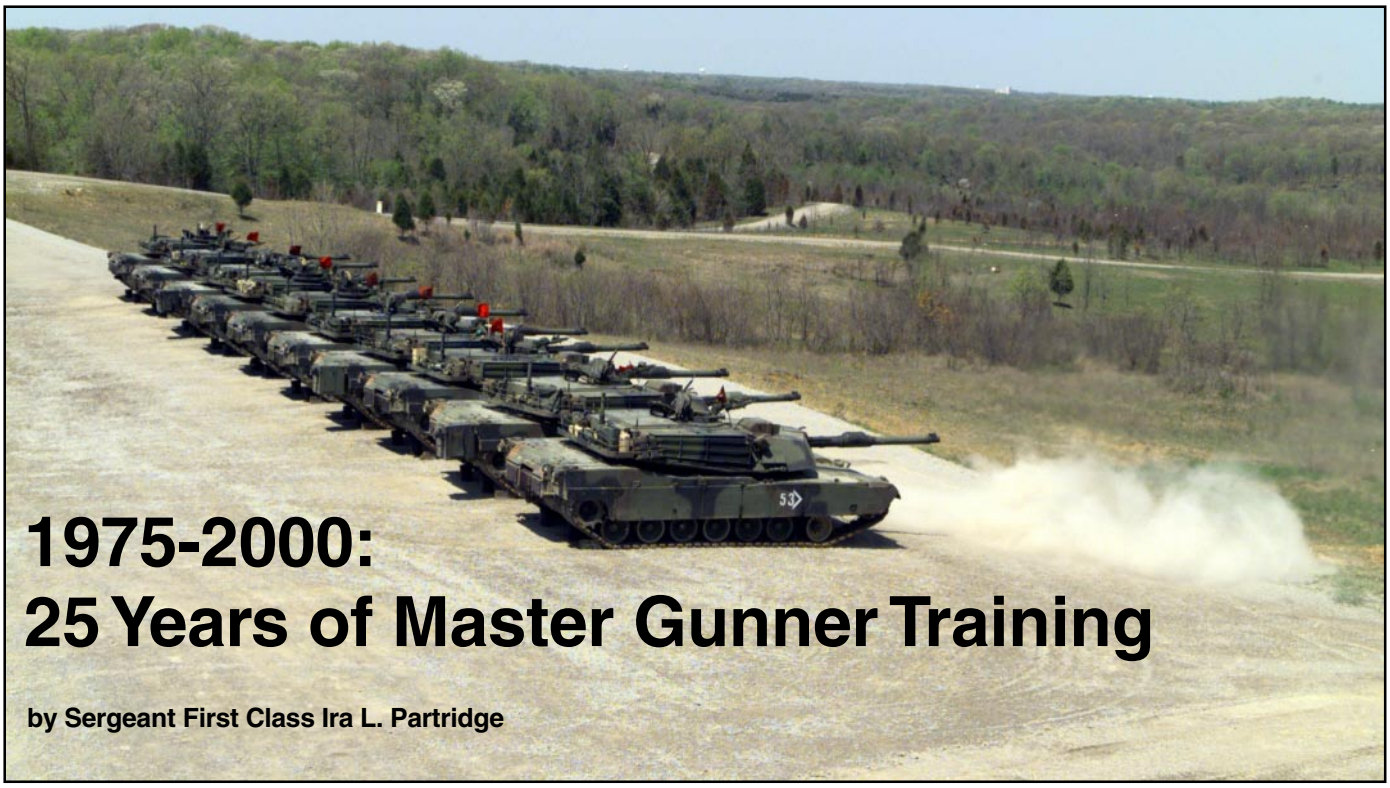
Left, tanks and infantry move to flush out insurgents as the demonstration develops.

Above left, one of the buildings that is equipped with smoke and flame generators "burns" after being hit.

Above right, a HMMWV crewman takes the insurgents under fire.

At right, Armor leads the way. Insurgent parking violations are treated harshly in this model city!

MG B. B. Bell, Fort Knox commandant, thanks some of the soldiers who helped conduct the demonstration for Armor Conference visitors. Buses shuttled the conference participants on 45-minute trips to the remote site.



1975-2000: 25 Years of Master Gunner Training

by Sergeant First Class Ira L. Partridge

Photo by Robert L. Stevenson

Calendar year 2000 is not only the dawn of the new millennium, it's also the 25th anniversary of the master gunner program. Since the first three pilot classes in 1975 — for the M60A1, M551 Sheridan, and the M60A2 tanks — the program has produced 3,871 master gunners. The influence of the master gunner on Armor unit readiness during the last 25 years cannot always be quantifiably measured, but since the program's inception, the master gunner has been the one to call when a tank has any kind of problem.

Where it all began

The master gunner program was created following the Middle East War of October 1973, a struggle that included the first major tank-versus-tank fighting since the end of World War II. The war caused many senior leaders to analyze U.S. Army doctrine and tactics based on lessons learned. Israeli tank doctrine leading into that conflict was mistakenly based upon armor-pure formations,[1] a doctrine validated by the fighting in the Sinai during the 1967 Mideast War, where victory was obtained by deep penetrations and rapid envelopments using tanks. Incorrectly identifying the reason for success, these assumptions elevated dependence on the tank to the point of excluding the other ground forces, leading to "all-tank" units by 1973. Additionally, in early battles, no attempt was made to close by maneuver. These "all-tank" units would charge from online formations without any type of overwatching fire, expecting defenders to break and run at the sight of charging tanks. In the opening battles of the 1973 war, these tactics left the armor-pure formations susceptible to antitank hunter-killer teams because the tanks lacked infantry support, resulting in a 50 percent loss rate. However, commanders soon realized that the problem was the "all-tank" formation, so they switched back to tactics employing tanks, artillery, and infantry in coordinated combined arms maneuver. Tankers were also forced to re-learn "position improvement," the use of terrain to mask movement, and movement by bounds under the cover of other tanks, instead of wildly "charging" defensive positions. The cost of learning this lesson of combined arms warfare was a staggering price in blood, and victory was only achieved by incredible luck and improvisation.

In early 1974, senior U.S. Army leaders had begun to analyze these armor battles, knowing that American armor might face the same type of combat. The Army was drawing down from its Vietnam-era, jungle/guerrilla warfare mentality and the senior leadership was looking for a new focus. One lesson learned from the 1973 war was that the tank that fired first with accuracy was the tank that usually won, and that armor unit readiness and tank gunnery proficiency are tremendously important on the battlefield. Tank crew proficiency at every level is essential; sufficient force, good equipment, and sound methods of employment in themselves are not enough.[2]

This analysis prompted senior officers at the Armor School to conduct a staff study to determine the best way to improve Armor unit readiness and gunnery proficiency. The study included visits with commanders in the field, and determined that each unit should have a tank expert to assist the commander and advise him in developing and executing his gunnery program. Thus was born the master gunner concept for the American Armor Force.

Drawing on a British Army tradition, the term master gunner is derived from the phrase "master of gunnery," with a master being defined as a workman (NCO) qualified to teach apprentices (armor crewman) and to carry on his trade independently. Gunnery is defined as the art and science of constructing and operating guns. In the British Army highly skilled noncommissioned officers were selected to attend specialized gunnery instruction at the Royal Armoured Corps Gunnery School, at Lulworth, England.

After TRADOC favorably reviewed the staff study, the Armor School was

directed to develop a program of instruction. The Chief of Staff of the Army, General Creighton W. Abrams, directed the Armor School to conduct a "Master Gunnery Course" on a one-time-only basis, teaching advanced gunnery subjects on the M60A1, M551, and M60A2 tank systems. The Armor School's pilot for the M60A1 graduated 12 students on May 16th, the M551 course graduated 10 students on October 3rd, and the M60A2 course graduated five students on December 18, 1975. Teaching these courses were NCOs selected from recent ANCOC graduates and instructors assigned to the Armor School's Maintenance and Weapons Departments who possessed tank systems expertise. The initial quotas of 12 students per class were divided equally between CONUS and USAREUR.

An Armor School Update, published after the 1974 Armor Conference, announced the Master Gunner Course as one of the new courses being designed:[3] "*These courses which we are proposing will, we feel, have great application in helping to solve some of the training and maintenance problems in armor and cavalry units today. The Master Gunner Course should fill the need for seasoned, experienced, and trained NCOs to advise, train, and supervise unit gunnery programs. The purpose of this course is to prepare highly selected NCOs in the mastery of the weapons systems of the M60A1/A3, the M551, and the M60A2 and to provide a thorough understanding of tank gunnery techniques and programs. Master gunners will be stabilized for two years. We are hopeful they will be able to maintain the continuity of professional gunnery training within our units, which are often subject to personnel turbulence at critical times. The concept for the course has been approved by the Chief of Staff, and we expect to train enough master gunners to provide a master gunner for each battalion/ squadron in FY 75 and one for each company/troop within two years after that*."

Based upon the success of the first graduate master gunners and numerous comments from Armor unit commanders, Department of the Army approved the Master Gunner Course in February 1976. On March 2, 1976, the first Master Gunner Class began and graduated 15 students on May 21, 1976.

Distinguishing the Program

There are many reasons for the continued success of the program and the superb training that all Master Gunner Course students receive. The first of two essential elements is an expert cadre that possesses the needed knowledge and experience. Master gunner instructors are experts on the subject being presented and they professionally present that subject. These instructors know *not only* the answers to the questions students raise, but often the answers to the questions that students don't usually ask.

The second essential element is a student trained up to baseline proficiency on the fundamentals of the tank system. These two elements combine to complete the concept of master gunner training, taking a soldier who is proficient in his tank, and turning him into an expert. Course entrance prerequisites epitomize the baseline of training, each prerequisite selected for the specific skills it represents. For instance, an SSG without tank commander (TC) experience, who has never qualified a tank from the TC position, cannot relate, train, or have credibility with TCs when training proper qualification procedures. Prerequisites also identify the top 10 percent of Armor Force NCOs, which is the target personnel resource base for master gunner candidates.

The original prerequisites for the courses were:[4]

- Active or Reserve
- Rank of SSG to SFC
- Minimum two years as TC
- Passed TCQC (Tank Crew Qualification Course, predecessor to TCPC)
- Volunteer
- "Handpicked" by the battalion commander
- Secret Clearance
- "After completion of the course be eligible for retention in his unit for a minimum of two years in the duty position of Master Gunner"

Prerequisites for these initial courses, announced in *ARMOR Magazine,* were slightly different:[5]

- Highly motivated
- 11E (pre-19 series tankers) volunteers E6 and above
- Qualified on Table VIII within the past 24 months
- Selected by the commander
- Two years retention by the unit that sent the individual to school after completion of the course
- Security clearance (SECRET)
- "Master Gunner candidate must be an individual who will be respected by his peers and listened to by his superiors"

These two sets of prerequisites comprise what was thought to be the necessary baseline skills that a master gunner would need. Throughout the history of the course, prerequisites have remained similar, but not without change. The rank requirement changed (automatic waivers are authorized by the Chief of Armor) to allow promotable sergeants to attend. Being "handpicked" was replaced by a requirement for a battalion commander interview. Two year stabilization was amended to an option available to the unit, with a 10-month service retention becoming the requirement. Added to the original prerequisites was a minimum GT score of 105, CO score of 110, and graduation from BNCOC. As stated, all prerequisites were selected for the specific skill they represent, and to distinguish the top 10 percent of all Armor NCOs.

Credibility is the Bottom Line

Key to initial approval of the Master Gunner Program was the credibility established by those first master gunners who took the knowledge out of the school and into the field. Graduates who share their acquired knowledge and train other tankers and tank crews are master gunners. Graduates who fail to impart this knowledge become highly trained tank commanders or platoon sergeants. Regardless of the position the master gunner is filling, he must pass on this acquired knowledge to maintain the credibility of being a master gunner. Credibility has been, and should always be, an essential element for the continued success of the Master Gunner Program. Without that credibility in the field there would be no Master Gunner Program. Quality, not quantity, is at the heart of master gunner credibility.

Information flow to and from the field via articles, newsletters, the Master Gunner Homepage,[6] and new master gunners add to this credibility. In the early 1980s, *ARMOR Magazine* carried a "Master Gunner Corner." In one of these,[7] the Master Gunner Program was described as a "tool for getting the knowledge out of the school and into field units, a highly technical course requiring above average intellect and motivation. Its brisk pace of instruction does not allow for students who cannot keep up."

The issue of credibility leads to two reasons why students are dropped from the course for not meeting academic standards. First, to ensure that the master gunner graduate is capable of producing

the results expected by his unit commander. After all, the master gunner is the linchpin for gunnery proficiency in Armor units. He has the knowledge that ties the three areas of a tank gunnery program together, which are turret maintenance, advanced gunnery techniques, and gunnery training management. Secondly, to protect the credibility of the master gunner, all master gunners currently serving in the field, and all the master gunner's that served before. To graduate students for political congeniality is not maintaining the high standards of the course and is a disservice to the Master Gunner Program and master gunners.

Jobs and Tanks

From the beginning — until March 1985 — the master gunner's job description was relegated to the status of an additional duty. He was slotted as a platoon sergeant or operations NCO. Serving in either of these positions often distracted the master gunner from his primary mission of training tank crews and advising his commander. Currently, TO&E authorizes a SSG position in the headquarters platoon as company master gunner, with a go-to-war mission as the company commander's alternate TC. Battalions are authorized an SFC for battalion master gunner, with a go-to-war mission of augmenting the battalion maintenance section; battalion commanders have another SFC as alternate TC.

Current Training Configuration

The master gunner student is being trained to be the commander's tank gunnery table technical advisor. He will assist the commander and staff in planning, developing, conducting and monitoring the unit's tank gunnery tables program, to include turret maintenance programs to ensure proper readiness posture is maintained.

To become a master gunner, the student faces 11 weeks or 55 days of the most academically challenging training that armor noncommissioned officers can face. The course includes 441 total hours, of which 36 hours are administrative, 178 hours are maintenance training covered in Exams I through III, and 227 hours are gunnery training and training management covered in Exams IV through VII. The course standards have always been 100 percent to pass hands-on performance tests and 90 percent to pass written tests. Written tests are usually 10-question free response tests, covering each subject area.

During the M1A2 Transition Course, the student receives four weeks of training on those areas specific to the M1A2 tank. With 160 total course hours, of which 16 are administrative, 105 hours encompass maintenance training, covered on Exam I, and 39 hours encompass gunnery training, covered on Exam II. The course standards remain 100 percent to pass hands-on performance tests, and 90 percent to pass written tests. Written tests, again, are usually 10-question free response tests, covering the particular subject area.

Into the Future

The future of the Master Gunner Program holds bold and interesting developments in the training of new master gunner students. In the near term, soldiers in M1A2SEP units will continue to get additional training during the M1A2 Transition course. Eventually, all transition students will learn both the M1A2 and M1A2SEP. Further down the road the M1A1 Master Gunner Course will do the same with the M1A1 and M1A1D. Beyond that, the Master Gunner Course will ultimately return to its original configuration by dual-tracking the M1A1/ M1A1D course with a separate M1A2/ M1A2 SEP course. But new technology has not been limited to the vehicles; it's continually being incorporated and utilized to improve the training that master gunner students receive. New technology, like computers and the internet, are being used to increase the amount of information available to master gunners, and the Armor force, in the field.

Sometimes new ideas are developed or proposed on how to better train master gunners. Some are interesting ideas that deserve further development and inclusion, and some deserve to fade from view as bad ideas. With the dawn of the new millennium, many things are changing with the constant expansion of the Internet, and the expanded use of computer-based training utilizing CD-ROMs. Using this media can help to develop a better trained master gunner. However, one mission cannot change — the continuous effort to maintain the high standards of the Master Gunner Program. Since the course's inception, these high standards have remained the foundation for all training. Unfortunately, high standards mean that not every soldier can become a master gunner, and this can be unpopular when soldiers are sent back to their units for failing to meet the standard. But a high standard should always be the primary mission. Remember that quality, not quantity, is the goal of the program. The demands of the job and what is expected of a master gunner are great; if the master gunner is not held to this high standard or prepared to meet the challenge, then the quality of the Armor force suffers.

The Master Gunner Program is a major contributor to why the American Armor force is the most respected in the world. New technologies and new training techniques will only make the program better, not simply produce more graduates. It continues to produce high quality, knowledgeable, and credible master gunners. The master gunner has, for the past 25 years, been sought out to answer any tank-related question, or when something just had to get done! The future should hold no less. Readiness of the Armor force is the goal of the Master Gunner Program. Let others pay in blood for *their* lack of readiness.

Notes

[1]MAJ Edwin L. Kennedy, "The Failure of Israeli Armored Tactical Doctrine, Sinai, 6-8 October 1973, "(*ARMOR*, Nov-Dec 1990), pp. 28-31.

[2]LTG John R. Deane Jr., Keynote address: "Armor Today and the October War," (*ARMOR,* Jul-Aug 1974), p. 35.

[3]Armor School Update, (*ARMOR,* Jul-Aug 1974), p. 45.

[4]Master Gunner Courses, (1975 U.S. Army Armor School, Self Study for Commission on Occupational Education Institutions), POI for Courses 020-F1 (M60A1/A3), 020-F3 (M60A2), and 020-F2 (M551).

[5]"Forging the Thunderbolt – Master Gunner," (*ARMOR,* Jan-Feb 1975), p. 8.

[6]Master Gunner Homepage: *http://147.238.100.101/school/16cav/mastgun/mgindex.htm*

[7]SFC James Barnes, Master Gunner Branch Chief, "Master Gunner's Corner: Only the Best Qualify to be Master of Gunnery," (*ARMOR,* Nov-Dec 1981), p. 11.

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The Hidden Risks of High-Intensity, Multiechelon Battle-Focused Lane Training

*FACT: 73 percent of fatal accidents occur **outside** the established training lane.*

by James M. Coffman

The Army's emphasis on realism in its high-intensity, battle-focused lane training sometimes results in training fatalities despite leaders' efforts to manage risk. But surprisingly, more soldiers are killed in accidents outside the training lane than during the lane training itself.

Mental fatigue, or letting down your mental guard, is an accident causal factor that accounts for a large majority of training fatalities outside the training lane. However, neither mental fatigue nor where or when a fatality occurs in relation to the training lane or phase of an operation appears as a primary cause or factor as a part of the Army accident investigation process. This information is critical to support the Army's proactive accident prevention program. In order to reduce the number of fatalities resulting from mental fatigue, the Army, its leaders, and soldiers must first recognize mental fatigue as a present and credible hazard during high-intensity, multiechelon, battle-focused lane training.

The Army employs lane training to train primarily company team-level and smaller units on a series of selected soldier, leader, and collective tasks using specific terrain. Lanes are generally formatted to fit specific terrain and unit mission-essential tasks. Lane training accommodates a wide range of training scenarios, dependent upon training objectives for particular units to be trained. Unit composition ranges from squad-size elements to multiple company-sized elements. The combination and mix of forces trained using this technique are endless and vary substantially. However, variations are based primarily on unit equipment, heavy for mechanized infantry and armor (tracked vehicles) and light for infantry units with wheeled vehicles.

High-intensity, battle-focused lane training is the foundation of Army training at Army installations and Combat Training Centers (CTC). The centers offer Army leaders and their soldiers the most realistic combat training available by enabling a unit to train repetitively to standard against a tough, competent enemy, commonly referred to as the Opposing Forces (OPFOR), and to conduct extensive live fire exercises.

These training centers generate a large percentage of the soldier fatalities that take place during training. This perhaps is not alarming considering the sustained continuous operations that are prevalent during the training, simulating combat conditions. To further explain events that leaders face in these training events, one need only look at the multitude of responsibilities these individual leaders and soldiers must assume in order to be successful in obtaining necessary combat skills. Their responsibilities are endless, ranging from ensuring their personnel have adequate ammunition to provision for medical care. All must be synchronized to continuously sustain the force. A more realistic training environment does not exist, as I view it.

As a tactical safety specialist, I've had the opportunity to observe Army units, both in training and during real world deployments, conducting training utilizing the high-intensity, battle-focused lane-training concept. I'm often awed at the ability of the Army leadership to manage the complexities associated with safely deploying and training thousands of soldiers at one time. My experience has culminated over the past six consecutive years observing rotations at the Army's various Combat Training Centers.

As a part of my involvement in these rotations, I've observed hundreds of hours of lane training focusing primarily on the integration of safety risk management into training. Risk management is a five-step hazard identification and reduction process Army leaders have embraced and used with great success. However, as I investigated one fatality after another, the accident scenarios continued to illustrate that serious accidents resulting in fatal injuries were occurring most often *outside* the training lane, an area where the balancing act of mission essential tasks and risk-taking in the combined arms fight is most challenging for Army leaders.

It's true: tough training does not come without risk, and at times soldiers' lives are lost during the rigors of training while mastering skills that will keep them alive to someday fight our nation's battles and win the nation's wars. Therefore, training must be tough, realistic, and challenging — training as we intend to fight. As General Douglas MacArthur said, "In no other profession are the penalties for employing untrained personnel so appalling or so irrevocable as in the military." (*FM 25-101, Battle Focused Training*)

One could presume that training lanes offer perhaps the highest degree of risk a leader and their soldiers face, not only during training but also in combat where the enemy is most likely to be. But the data collected from our nation's wars and conflicts contradicts this assumption. Studies of U.S Army casualty rates illustrate that accident losses experienced in combat are no different than losses experienced during peacetime training. Furthermore, accidents account for more casualties than those casualties inflicted from enemy action in every war from World War I to Desert Shield/Desert Storm. The exception is the Korean War. *(http://safety.army.mil/program.html)*

A review of Army installations' and CTCs' pre-accident, accident, and post-accident phase narratives from the pre-

Army Safety Center Photo

This fatal Bradley rollover occurred at night with NVGs. What the driver saw as a "shallow ditch" ahead was actually a 15-foot depression.

vious five years of fatal accident reports reveal that *73 percent of all fatal accidents occur outside the established training lane*. (Phyllis Moon, *Fatal Accident Reports)* Further, research into recent non-fatal accidents at the National Training Center (NTC), Fort Irwin, California, the Army's premier CTC, reveals 63 percent of all nonfatal accidents occurred outside the established training lane as well. *(*Department of the Army, Headquarters, Plans and Operations, Operations Group, National Training Center, Fort Irwin, California*, Safety Incidents for Rotation 99-01)* This suggests that leaders and their soldiers experience a lower accident rate inside the training lane, where the highest risks are perceived. Therefore, an assumption can be made, based on the current data, that Army leaders are clearly identifying high risk operations and applying adequate control measures inside the lane, reducing risks to their soldiers, equipment, protecting the force, and accomplishing the training mission. Make no mistake about it, they are!

The reasons for these training fatalities outside the lane are broad and varied. Statistics from the U.S. Army Safety Center reveal the majority of accidents are a result of human error — 48 percent individual, and 18 percent leader. The U.S. Army expends extensive resources on proactive prevention efforts to reduce and possibly eliminate recurrence of these tragic losses. However, the current mechanism used to identify hazards that account for training fatalities does not specifically address where deaths occur in relation to the training lane, during what phase of an operation they occur, or the effects of mental fatigue. These attributes significantly impact causal factors applied to human error rates. Currently, the accident report used to collect pertinent accident data utilizes an array of codes fed into a computer database for retrieval at a later date. The system is set-up to allow safety professionals and Army leaders to search the database, based on specific fields, or search criteria, which assists them in identifying accident trends encountered during training. This information is critical in supporting safety professionals and Army leaders, and proactive accident prevention programs. Without it, professionals and leaders have no mechanism to identify trends, or retrieve data that specifically addresses the hazard potential of the three factors.

The events that frequently generate training fatalities are not primarily indicative, or a direct result of, what takes place in the training lane. The expectation is for leaders and soldiers to focus on where the enemy is most likely to raise its ugly head and kill it. Therefore, it's logical to assume that a great deal of effort in terms of planning and executing the events in the lane is taking place, including the management of risk. This planning process is an extremely complex and demanding effort. This is a process which, I believe, may be producing tremendous mental fatigue that contributes to unplanned events resulting in the loss of equipment, soldier capability, or life. This ultimately degrades unit effectiveness, commonly referred to as loss of combat power by Army commanders. In the safety business, this is also known as an accident. As LTC Michael M. Grant said in *Army Trainer Magazine*, September 1993, "The most credible associated hazard is not the obvious." He also concluded that most accidents occur when and where you least expect them, and that leaders who let their guard down will continually gamble with ever-present risks associated with realistic training. This may not be a novel conclusion, but when it consumes soldiers' lives, novelty is not at issue.

What causes leaders to focus so much attention on the training lane? The challenge is in balancing leader emphasis and soldier focus beyond the lane, where risk continues to produce

Leaders who push the mental envelope achieve the pursuit of skilled performance and precision in the training lane, but this results in the buildup of mental fatigue, risking greater error at a later time outside the lane.

greater accident rates, whether these risks are perceived as credible or not. Safe training results from systematic management of inherently dangerous training risks. (*FM 25-100, Training the Force)* Lanes are established to closely emulate combat; therefore, it's logical to assume that the greatest potential of risk lies therein. Perhaps this logic, and the effects of mental fatigue, is causing leaders and soldiers to dismiss the real apparent hazards outside the lane. Statistically, accident investigations have proven leaders and their soldiers focus their undivided attention to the lane and the immediate mission at hand. As a result, far fewer accidents occur inside the lane as opposed to outside.

Leaders who push the mental envelope achieve the pursuit of skilled performance and precision in the training lane, but this results in the buildup of mental fatigue, risking greater error at a later time outside the lane.

Dr. Gerald J. S. Wilde, a research psychologist who has long studied the effects of mental fatigue, has determined that with ever-increasing complex tasks, human error increases as a direct result of mental fatigue. (Gerald J. S. Wilde*, Target Risk)* This could be a contributing factor in lane training fatalities, a factor that should be acknowledged by Army leaders at all levels.

Convincing warfighters that the greatest risks are the ones imposed by themselves, not the enemy, is a difficult teaching point to absorb. Proposing that leaders and soldiers alike take a hard look at how we perceive risk throughout the various levels of training and war may be the necessary approach. This must first be acknowledged at senior levels before it's recognized as a credible factor when considering and managing risk in the future. Soldiers are not often in the position to fully perceive or understand the risks inherent in the tasks they are directed to perform. They depend on their leaders to ensure that they are protected from potentially hazardous situations. Accident experience shows that mission-stopper accidents occur when victims are ignorant of hazards and the countermeasures, or when directed countermeasures are ignored. (*FM 100-22, Installation Management)*

Understanding the complexities of mental fatigue and its effects on leaders and soldiers during high-risk operations outside the training lane will help protect our most precious resource (soldiers). This new awareness will ensure the appropriate level of leader involvement to mitigate risk throughout the lane, not just in it. That is not to say that our leaders are not addressing hazards, but perhaps their emphasis should shift to equally distributed leadership throughout the lane. Increasing emphasis is not the cure-all for reducing fatalities. Individual discipline, and training to standard form the foundation required to address the trend. Safe training is a predictable result of performing to established tactical and technical standards. (*FM 25-100, Training the Force*) By developing and maintaining this awareness, leaders and soldiers will be better equipped mentally, not only for the hazards they face during high-intensity multi-echelon battle-focused lane training, but also the hazards of war.

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Abbreviations

CONOPS - Continuous Operations

CTC - Combat Training Center

CSS - Combat Service Support

OPFOR - Opposing Forces

NTC - National Training Center

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Change of Command Inventory 101

Tips on Counting Your "Stuff" Before You Sign

by Major Pat Flanders

Getting off on the right foot for your tour as commander starts with signing for your organization's property. As the commander, you are financially liable for your unit's property — ALL of it. Army Regulation (AR) 735-5, *Policies and Procedures for Property Accountability* covers your responsibilities, but this article describes, in layman's terms, the types of property, responsibilities of incoming and outgoing commanders, and tips to help you conduct a successful inventory.

Types of Property Accounts

Normally, you will hold property book accounts with several different offices. The document that you will sign to establish you as the responsible officer for your unit's property is called a "primary hand receipt." You may be surprised at how many different accounts for which you will sign. Here are the ones I encountered:

Organizational Property. This is the property with which you are probably most familiar. It consists of all your "go to war" Modified Table of Organization and Equipment property (MTO&E), and in divisional units, the Division Property Book Office (DPBO) issues it to you.

Installation Property. The Installation Property Book Office (IPBO) normally issues you Table of Distribution and Allowance (TDA) equipment. This equipment is non-deployable and normally consists of items like desks, file cabinets, safes, and other commercial office equipment.

Training Area Support Center Property. This is commonly referred to as TASC property and normally consists of items used strictly for training purposes. I signed for a megaphone and some other training aids that I kept at my company on a permanent basis. Most of your business with TASC, however, will be in the form of temporarily borrowing training aids (training films, overhead projectors, televisions, etc.).

Civilian Furniture Management Office Property. This office, also known as CFMO, will issue you all your barracks furniture and linen. It can add up to a substantial amount of property, depending upon the size of your unit. Make sure that the Noncommissioned Officer (NCO) that you put in charge of this is well versed in proper supply procedures.

Non-Appropriated Fund Property. In USAREUR, this office issues supplemental items purchased with "non-appropriated" funds from the community account. Normally, these are items to improve morale for soldiers, such as pool tables, weight sets, and microwaves.

Account Requirements Code (ARC)

Army property is classified for accountability purposes as expendable, durable, or non-expendable. The Account Requirements Code (ARC) is a one-position code listed in the Army Master Data File (AMDF) for every National Stock Number (NSN) to identify the specific classification and the degree of accountability that you must apply. AMDF information is published on *FEDLOG* compact diskettes on a monthly basis by the Defense Logistics Agency. The ARC is the single most important code that you will reference during your inventory. Here is a rundown on the three types of ARC:

- **ARC "N" – Non-expendable item.** These are the "major end-items" that you will formally sign for from the different types of property book offices that I mentioned above. This is the "big stuff" that you absolutely cannot be missing.

Who can order an item with ARC of "N"? The document register for non-expendable items is maintained by the accountable officers (the PBOs), so the only way you can order one of these items is through them. If you try to order an ARC "N" item with your Unit Level Logistics System – Ground (ULLS-G) document register (in your motor pool) or your Unit Level Logistics System – S4 (ULLS-S4) document register (in your Supply Room), it will be automatically cancelled.

What if I'm short an item with ARC of "N"? To get your property book officer to remove one of these items from your primary hand receipt, you will need proof of: Turn-In (DD Form 1348), Lateral Transfer to Another Unit (DA Form 3161), Report of Survey (DA Form 4697), Cash Collection Voucher (DD Form 362), or Statement of Charges (DD Form 362). In addition, loss of a sensitive item may require you to conduct a 15-6 investigation. A sensitive item is annotated on the AMDF with a Controlled Item Inventory Code (CIIC) of "1-9", "$", "N", "P", "Q", "R" or "Y."

Bottom line: Don't lose a non-expendable item. Someone is going to buy it!

- **ARC "D" – Durable item.** These are items classified as "not consumed during use." Although they do not require property book accountability, they do require hand-receipt control from you, the commander, to the user. Examples of "durable" items include most hand tools, software in excess of $100, and fabricated items similar to durable items (drip pans for pot-belly stoves).

Who can order an item with ARC of "D"? Normally your unit supply room will have a durable document register and you will be able to order them yourself. In some units, however, the durable document register is maintained by the battalion S4. If your unit does have a battalion-level durable document register, your local SOP may require you to consolidate your requests and submit them through battalion. If you have the ULLS-S4 system, you should have your own durable document register.

What if I'm short an item with ARC of "D"? As the company commander, you are responsible for determining liability for loss of durable items if the loss per total incident is less than $100. If it is greater than $100, you are required by regulation to initiate a Report of Survey (See *AR 735-5*, Para. 14-24).

Bottom Line: Don't lose durable items. Someone almost always buys them.

- **ARC "X" – Expendable item.** Expendable items are classified as repair parts or items that are consumed in use or that are not otherwise classified as durable or non-expendable. Examples include sandpaper, light bulbs, Class IX items, and fixtures.

Who can order an item with ARC of "X"? It normally depends upon the class

of supply. Class of supply can be determined by the first position of the Supply Category Materiel Code (SCMC) on the AMDF. Your unit motor pool will normally maintain the expendable document register for Class IX, and these items will be ordered through the ULLS-G computer. Class II, IIIP, & IV expendable items are normally ordered through the unit supply room (ULLS-S4) or in some units through your BN S4 (just like for durable items).

What if I'm short an item with ARC of "X"? As the company commander, you are responsible for determining liability for loss of expendable items. Normally, if it's short/consumed, you can just order another one. Be watchful, however, for losses of expendable items that are recoverable, such as HMMWV starters and alternators, or that are pilferable (CIIC of "J"), such as office supplies and "Chem Lights." Recoverable and pilferable items require additional supply and issue controls and a loss may require you to initiate a report of survey or a formal investigation, depending upon the circumstances. You can tell if an item is recoverable by its Recoverability Code (RC) on the AMDF. An RC of "A", "F", "H", "D", or "L" requires that you turn in an unserviceable item in order to order a new one.

Commander's Hint: Your supporting Material Management Center (MMC) will monitor your requisitions for recoverable items and require you to report a reason for all mismatches (you ordered a new item without turning in the unserviceable) on a monthly basis. The MMC will distribute a monthly list for you to reconcile. The list is called the Overage Recoverable Item List (ORIL) in units supported by warehouses utilizing the Standard Army Retail Supply System – Objective (SARSS-O). Don't give these reports "lip service." In my division, turn-in of this report had commanding general visibility.

Bottom Line: Monitor the use of expendable items. Contrary to popular belief, someone may be required to buy them if not used properly.

Sets, Kits, and Outfits and Items with Components

Every non-expendable item should have a Technical Manual (TM) or Supply Catalog (SC) that lists Components Of the End-Item (COEI), Basic Issue Items (BII), and Additionally Authorized List items (AAL). You MUST have the appropriate TM or SC in order to properly inventory and account for your property.

SUB-HAND RECEIPT REPORT PCN: AWE-136

UIC/DESC: WDJYDD/D CO, 701ST MSB PBO: DPBO 1ST INF. DIV. TEAM 6
FROM: CPT WHITE, BRADLEY TO: SFC DOE, JOHN SUPERVISOR:
COMMANDER TOOL PLATOON
SHR: CDR 29

LIN	SUBLIN	GEN NOMENCLATURE / STOCK NUMBER / NSN NOMENCLATURE / PUBLICATION / (SN-REG-LOT NUMBER /LOT QT/CL NR)	SRRC	CIIC	UI	|-QUANTITY-| AUTH	ON HAND	REMARKS
S70027		SEMITRAILER FLAT BED: BREAKBULK/CONT TRANSPORTER 22				00001		
	2330001226779	STLR LB 22	S	U	EA	00001		_____
	(NXOCES-2503 / /D-424T)							
V12141		TANK AND PUMP UNIT LIQUID DISPENSING TRUCKMOUNTING:				00001		
	4930011307281	TK-PUMP UN 13217E7130	S	U	EA	00001		_____
	(95-0068 / /CL0001)							
X40009	X40794	TRUCK CARGO: 2-1/2 TON 6X6 W/E				00001		
	2320010502084	TRK CGO D/S M923	R	U	EA	00001		_____
	(C523-03003 / /D-187)							

/---------- NOTHING FOLLOWS ----------/

ISSUED BY: RECEIVED BY:
SIGNATURE _____ DATE _____ SIGNATURE _____ DATE _____
WHITE, BRADLEY CPT DOE, JOHN SFC

Figure 2-2. Example of an ULLS-S4 sub-hand receipt (not signed).

You are required to have all COEI and BII on-hand or on-order. You are required to have AAL on-hand once it has been issued to you, but ordering shortage AAL is normally left to the discretion of the commander.

How do I know if an item has components? You have to check the TM or SC. You can tell if an item has a TM or SC governing it by looking up the NSN or Line Item Number (LIN) on *DA Pam 25-30* (*Consolidated Index of Army Publications and Blank Forms*). *DA Pam 25-30* is produced by the U.S. Army Publications and Printing Command (USAPPC) on CD ROM. Be **sure** to look up NSNs for TMs for non-expendable COEI, too. **Sometimes the components have components** (for example, the "Torch Outfit" that is a component of the "No. 1 Common Shop Set").

Commander's Hint: If *DA Pam 25-30* lists no TM or SC for an item, be sure to document it. I recommend that you do this on a weekend prior to starting your inventory. Get a copy of your non-expendable hand receipts and look up every line on *DA Pam 25-30*. If there are no references to inventory by, or if you can't locate a copy of the correct TM/SC, then create component hand receipts for these items by identifying everything that is on-hand. Write a memorandum listing all of your findings, stating that "to the best of your knowledge all components were present."

What if I can't identify an item based on the nomenclature on the property book? Try looking up the NSN on the AMDF. This will often give a better description than the property book print-out.

Commander's Hint: You may find cases where the item you are inventorying is not on the AMDF or has no identifying data plate, brand name, or other markings. If you are nervous that what you are looking at may not be what you are supposed to be signing for, take a photograph of the item and write a memorandum to document the problem. Provide a copy of the photo and the memorandum to your PBO.

Types of Hand Receipts

The Army "form" used for creating manual hand receipts is the DA Form 2062. Most active duty units, however, are now using ULLS-S4 to account for property. ULLS-S4 is a great tool, but it is only as good as the data that is input to it. Basically, ULLS-S4 allows you to make a sub-hand receipt showing all the property for which each sub-hand receipt holder will sign, instead of using a DA Form 2062. It also allows you to create component hand receipts for each item with components.

Sub-Hand Receipts, Shortage Annexes, and Component Hand Receipts

A DA Form 2062 or its ULLS-S4 equivalent can be prepared as either a

sub-hand receipt, shortage annex, or a component hand receipt. It is imperative that you understand the fundamental differences and the regulatory requirements for preparing each of these. I've listed them below:

Sub-Hand Receipts. A sub-hand receipt is a listing of all major end-items for which a sub-hand receipt holder will sign.

- You will issue property to your sub-hand receipt holders using sub-hand receipts.
- When a person signs a sub-hand receipt, he/she accepts responsibility for the end-items and all of their components. The sub-hand receipt holder is financially liable for all components, **except those listed as short on accompanying shortage annexes or that are signed for using component hand receipts.**

Figure 2-2 depicts an ULLS-S4 generated equivalent of a DA Form 2062 sub-hand receipt.

Shortage Annexes. A shortage annex lists only what is "short" from an end-item that has components.

- A shortage annex is prepared at the level where document registers are kept. Its purpose is to document what is authorized to be short.
- Your PBOs will issue you shortage annexes for the non-expendable components that are short from your major end-items.
- You may in turn utilize shortage annexes to document shortages when issuing items below you to the "supervisors of end-users."
- You **CANNOT** use a shortage annex to document shortages when issuing items to the end-user (the soldiers); you must use a component hand receipt (See *AR 710-2,* Para. 2-10h(1)).

Figure 2-3 depicts a DA Form 2062 prepared as a shortage annex from the PBO for the non-expendable components that are missing from the "SEMITRAILER FLAT BED: BREAKBULK/CONT TRANSPORTER, 22 TON" on the sub-hand receipt in Figure 2-2.

Component Hand Receipts. A component hand receipt lists all components of an end-item – you sign for what you have "on-hand."

- A component hand receipt can be prepared by any person issuing property.

HAND RECEIPT/ANNEX NUMBER 1 — FROM: PBO, 1st ID Team 6 — TO: Commander D Co, 701st MSB — HAND RECEIPT NUMBER WDJYDO

For use of this form, see DA PAM 710-2-1. The proponent agency is ODCSLOG.

FOR ANNEX/CR ONLY	END ITEM STOCK NUMBER	END ITEM DESCRIPTION	PUBLICATION NUMBER	PUBLICATION DATE	QUANTITY
	2330-00-112-6779 (S7027)	SLTR LB 22	TM 9-2330-358-14&P	01 DEC 87	1

STOCK NUMBER a.	ITEM DESCRIPTION b.	* c.	SEC d.	UI e.	QTY AUTH f.	g. QUANTITY A	B	C	D	E	F
2540-00-797-9195	T/I DOC# W8081P 7025-7601 AOA DOC#W8081 7088-7622 TARPAULIN	N	U	EA	1	1					

* WHEN USED AS A:
HAND RECEIPT, enter Hand Receipt Annex Number
HAND RECEIPT FOR QUARTERS FURNITURE, enter Condition Codes
HAND RECEIPT ANNEX/COMPONENTS RECEIPT, enter Accounting Requirements Code (ARC).

PAGE 1 OF 1 PAGES

DA FORM 2062, JAN 82 — EDITION OF JAN 58 IS OBSOLETE — USAPPC V2.10

Figure 2-3. Example of a DA Form 2062 shortage annex (not signed).

- It makes no difference whether the person receiving the item is a supervisor or a user.
- The person signing for the property only signs for "what is there."
- The person issuing the property accepts liability for the items that are annotated as short.

Figure 2-4 depicts a DA Form 2062 prepared as a component hand receipt for the same "SEMITRAILER FLAT BED: BREAKBULK/CONT TRANSPORTER, 22 TON" shown in Figure 2-3.

Administrative Adjustment Reports (AARs). Minor adjustments to your primary hand receipt are requested from the PBO using a DA Form 4949 (Administrative Adjustment Report). Examples of minor adjustments include spelling mistakes, minor serial number changes for non-sensitive items, and errors in size, make, and model. During your inventory, you will probably encounter some errors

HAND RECEIPT/~~ANNEX NUMBER~~ — FROM: Commander D Co, 701st MSB — TO: Tool Platoon NCOIC SFC Doe, John D Co, 701st MSB — HAND RECEIPT NUMBER 29

For use of this form, see DA PAM 710-2-1. The proponent agency is ODCSLOG.

FOR ANNEX/CR ONLY	END ITEM STOCK NUMBER	END ITEM DESCRIPTION	PUBLICATION NUMBER	PUBLICATION DATE	QUANTITY
	2330-00-112-6779	SLTR LB 22	TM 9-2330-358-14&P	01 DEC 87	1

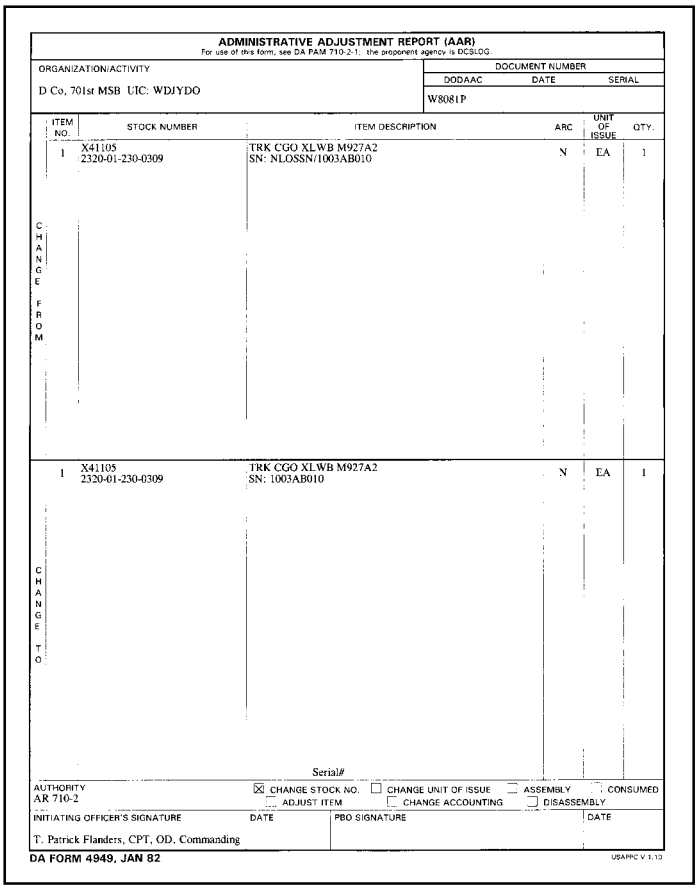
STOCK NUMBER a.	ITEM DESCRIPTION b.	* c.	SEC d.	UI e.	QTY AUTH f.	g. QUANTITY A	B	C	D	E	F
S70027 2330-00-122-6779	Ser# NXOCES-2503 SLTR LB 22	N	U	EA	1	1					
	BASIC ISSUE ITEMS										
3990-01-217-1085	STRAP ASSY	X	U	EA	2	2					
4010-01-109-9435	CROSS CHAIN ASSY	X	U	EA	4	4					
	ADDITIONAL AUTHORIZED ITEMS										
2540-00-797-9195	TARPAULIN	N	U	EA	1	1					
2540-01-138-3990	BOW	X	U	EA	9	9					

* WHEN USED AS A:
HAND RECEIPT, enter Hand Receipt Annex Number
HAND RECEIPT FOR QUARTERS FURNITURE, enter Condition Codes
HAND RECEIPT ANNEX/COMPONENTS RECEIPT, enter Accounting Requirements Code (ARC).

PAGE 1 OF 1 PAGES

DA FORM 2062, JAN 82 — EDITION OF JAN 58 IS OBSOLETE — USAPPC V2.10

Figure 2-4. Example of a DA Form 2062 component hand receipt (not signed).



ADMINISTRATIVE ADJUSTMENT REPORT (AAR)
For use of this form, see DA PAM 710-2-1; the proponent agency is DCSLOG.

ORGANIZATION/ACTIVITY: D Co, 701st MSB UIC: WDJYDO

DOCUMENT NUMBER — DODAAC: W8081P; DATE; SERIAL

ITEM NO.	STOCK NUMBER	ITEM DESCRIPTION	ARC	UNIT OF ISSUE	QTY.
CHANGE FROM: 1	X41105 2320-01-230-0309	TRK CGO XLWB M927A2 SN: NLOSSN/1003AB010	N	EA	1
CHANGE TO: 1	X41105 2320-01-230-0309	TRK CGO XLWB M927A2 SN: 1003AB010	N	EA	1

Serial#

AUTHORITY: AR 710-2

☒ CHANGE STOCK NO. ☐ CHANGE UNIT OF ISSUE ☐ ASSEMBLY ☐ CONSUMED
☐ ADJUST ITEM ☐ CHANGE ACCOUNTING ☐ DISASSEMBLY

INITIATING OFFICER'S SIGNATURE — DATE — PBO SIGNATURE — DATE

T. Patrick Flanders, CPT, OD, Commanding

DA FORM 4949, JAN 82 — USAPPC V 3.10

Figure 2-5. Example of an AAR to change a serial number (not signed).

which will require AARs to correct. Figure 2-5 shows an AAR to change a serial number on a 5-ton truck.

Other Forms You Need To Know

Change Documents. A DA Form 3161 (*Request For Issue Or Turn-in*) or its ULLS-S4 equivalent, used to document additions and deletions to hand receipts, is called a change document. Your supply sergeant will document issues and turn-ins to and from your sub-hand receipt holders using these forms. Change documents should be filed with the sub-hand receipts until they are updated. Sub-hand receipts should be updated every six months.

Responsibilities – Whose Job Is It?

Here are the major responsibilities of the incoming and outgoing commanders:

The Outgoing Commander.

- Schedule the change-of-command briefings with the next level commander and the various property book offices.
- Create the inventory schedule.
- Recall all unit property loaned out.
- Update change documents to all sub-hand receipts.
- Reconcile sub-hand receipts and annexes to the primary hand receipts.
- Account for all Class IX recoverable items as depicted on the Overage Recoverable Item List (ORIL).
- Turn-in all unserviceable property.
- Prepare and submit all adjustment documents created during the inventory (i.e. Administrative Adjustment Reports, Reports of Survey, etc.).

The Incoming Commander.

- Receive briefings from Property Book Officers. Get copies of all PBO primary hand receipts and non-expendable shortage annexes.
- Reconcile sub-hand receipts and annexes to the primary hand receipts prior to conducting the actual inventories.
- Conduct a 100% inventory to include all BII, COEI, and AAL items on-hand.
  - Verify all serial numbers.
  - Use current publications to inventory.
- Inspect OCIE (TA-50).
- Inspect absentee baggage.
- Inspect and accept responsibility for all recoverable items depicted on the Overage Recoverable Item List (ORIL).
- Prepare new DA Forms 1687 (Signature Cards) to allow designated personnel to sign for property on your behalf.
- Prepare "assumption of command" orders for each property book office.
- Ensure that all adjustment documents are initiated by the outgoing commander.

Before You Start the Inventory

Before beginning your change-of-command inventory, there are several things you should do in order to ensure success.

1. Sit down with the outgoing commander and come up with a plan. Try to do this at least eight weeks out from the day of the change-of-command. Be sure to address the following:

- A schedule for in/out-briefings with each Property Book Office (DPBO, IPBO, CFMO, TASC, etc.) and the battalion commander or next level commander. Be sure to make appointments!

- Ask the outgoing commander if he thinks 30 days will be enough time. If he knows it isn't, ask the battalion commander if he can afford to give you an extension. What are his feelings about it?

- If you can, try to "freeze" your property book accounts during the 30 days of inventory. This way you won't have to worry about accepting new major end-items from your supporting warehouses or any lateral transfers to/from other units. This will allow you to focus on the inventory.

Commander's Hint: Remember, you are NOT the commander, yet. You can make suggestions and recommendations, but you cannot "direct" the outgoing commander to do anything. Don't get off on the wrong foot by trying to tell him/her how things "will" be done. Cooperate and work together as a team.

- A schedule for the actual inventory.

- Try to leave one day per week as a make-up day. Use this day to work with the supply sergeant, update changes to sub-hand receipts, review upcoming sub-hand receipts, and to re-inventory any problem areas.

- Ask to schedule the hardest sub-hand receipts first; this gives you more time to resolve problems.

- Recommend to the outgoing commander that you inventory entire sub-hand receipts at one time, instead of doing bits and pieces. Ensure that before you walk away, **the sub-hand receipt holder signs for the property again from you**. Resolve differences later, but **get that signature**.

Commander's Hint: You may hear that it's best to inventory "like" items on a

single day in order to keep dishonest people from borrowing items to make up shortages during your inventory. For example, scheduling a special day to count all Basic Issue Items (BII), camouflage nets, and General Mechanics Toolboxes. In my opinion, this is NOT a good idea. If someone is going to be dishonest, they will still get around your efforts to keep them from borrowing equipment by going outside of the company. It's more important to keep sub-hand receipt integrity and get the sub-hand receipt holders to sign for property **on the day that you finish inventorying it**. There are only a few "bad apples" out there and you will catch them in the long run.

- Don't forget to schedule a day for a Clothing Issue Facility (CIF) property layout. Although you will not personally sign for the CIF, you need to ensure that the soldiers have all their TA-50 and that CIF hand receipts have been updated.

- Schedule a time to inventory absentee baggage, if you have any. Absentee baggage consists of individual's belongings placed in temporary storage due to temporary absence (i.e., AWOL, short deployment, etc.).

- Schedule a Personnel Asset Inventory (PAI). The PAI is simply an inventory of your soldiers. Get an alpha roster from your S1 and have the soldiers file past you in a line. Check ID cards and dog tags and ensure you have proper accountability for everyone. Inventorying people may seem ridiculous, but believe me, this is necessary!

Commander's Hint: You can "make a lot of money" with a well planned PAI. If you can, schedule it in the morning on the day before you take command. Use it as an opportunity to update Soldier Readiness Files (SRF) and Family Care Plans. Have your motor officer reprint copies of all your soldier's drivers licenses with your signature block on them. Sign them and issue the updated licenses to your soldiers as they come through the PAI. You won't need to update the weapon and mask cards (DA Form 3749, *Equipment Receipt*). The old commander's signature is still good (see *AR 710-2-1*, Para. 5-5,b).

- Schedule a half-hour to inventory any bulk fuel or fuel coupons your unit may have. You don't want to find out that you can't account for 600 gallons of fuel 30 days after the change-of-command. It may take a report of survey to correct the shortage.

- Schedule a half-hour to inventory the company safe. Stuff gets put in the safe for a reason, but it tends to be easily forgotten. When I took command, I was afraid to get rid of anything that was in it because I thought it might be important. I'm embarrassed to admit this, but halfway through my tour as commander, I found a $740 check that was two years old! It was payment for work that the soldiers had done at a community festival. The money was supposed to be used for buying items to improve the barracks... but of course, the check was no longer good.

- Be sure to publish your inventory schedule on the unit training schedule. This means it has to be done at least six weeks out.

- Discuss the "order" in which items will be laid out for inventory. For example, will items with components be laid out in the order of the Technical Manual/Supply Catalog or in the order of the component hand receipt — they are usually not the same. I recommend that you lay out in the order of the component hand receipts. This makes the inventory process much faster.

- Discuss how early you can get copies of the updated sub-hand receipts and all TMs/SCs. You NEED them not later than the Friday before the week when you will actually inventory that sub-hand receipt. This gives you a weekend to review them. When you review component hand receipts, be sure to compare them to the SCs and TMs. Look for mistakes, especially with non-expendable and durable property.

- Ask if there is any equipment on loan, in calibration, or at Direct Support (DS) maintenance. Try to go see it. If you can't, discuss how you will handle this.

2. Prepare an "inventory kit" of supplies that you will need to execute your inventory. Include the following:

- Copies of all primary hand receipts from your supporting property book offices (DPBO, IPBO, CFMO, etc.).

- Copies of all non-expendable shortage annexes from your supporting property book offices. These shortage annexes list the non-expendable components that you are authorized to be missing.

- A camera for photographing items with no identifying data plates.

- A can of spray paint.

Commander's Hint: You may or may not need the spray paint. I used spray paint to mark items that were difficult to inventory, so that I would know that I already counted them. For instance, I had 649 steel "flex" pallets to inventory in my warehouse platoon. They all looked the same and were located in various places throughout the battalion. Other companies in my battalion also signed for these same types of pallets. I painted an orange "dot" on each of my pallets so I would know which ones I counted as mine. I lost my count several times throughout the process, but because I had painted them, I knew which ones that I had already counted.

- Blank DA Form 2062s. Use these for creating component hand receipts for items that you find "off the books" during your inventory.

- A tape measure. Use this to help identify components.

Commander's Hint: Don't be the guy who measures the Band-Aids in the first aid kits. The tape measure is for measuring hard to identify items that look alike (like the myriad of pry-bars on the M936 wrecker). Don't get too wrapped up about things like the lengths of screwdrivers and punches, either. A 3.5-inch long #2 screwdriver can do the same job as a 4-inch long #2 screwdriver 99% of the time. Don't waste someone's money buying another one just because it doesn't perfectly match the description in the TM or SC.

- Copies of an "initial counseling" statement for all of your sub-hand receipt holders.

Commander's Hint: You really need to spell out the duties of a sub-hand receipt holder in your unit. Tell them exactly how you plan to do business and outline the rules that you plan to live by. An "initial counseling" memorandum is a good way to do this.

- A notebook computer with a CD ROM drive. Use this to look up NSNs on the *DA Pam 25-30* CD ROM during your inventory. It's nice to be able to look up NSNs on the spot.

- A brief case or duffel bag to carry it all in.

During the Inventory

If you follow my recommendations, by the time you actually start your inventory you should be well on the road to success. Here are some recommendations for once you actually start counting:

1. Keep track of who is signed for what. Write the name of each NCO and the sub-hand receipt number next to each

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A Rite of Passage

At the End of a Long Journey, These Men Are Now Tankers

After spending six days and five nights in the field, where they practiced the theory they learned during OSUT training, E Company, 2-81 Armor, road marches 15 kilometers back to their battalion area for a ceremony that will welcome them into the Armor Force.

At the battalion parade field, new 19 Kilos form up to receive congratulations along with their new tanker brass, Army Service Ribbons, regimental crests, and Army Values tags. On their return to their barracks, each new trooper finds a brand new pair of tanker boots under his bunk. The ceremony reinforces the 81st's regimental history, which began at Fort Knox in 1941, before the unit shipped out to fight at Normandy and the European Theater.

Photos by Robert L. Stevenson

After receiving a range orientation and safety briefing by the Range Safety Officer, right, OSUT troopers mount their tanks for familiarization on the 120mm main gun and the tank's three machine guns.

DEPLETED URANIUM

— the truth and nothing but the truth

by Mike Sheheane

(Reprinted from the January 2000 issue of Army Chemical Review)

Silver bullet! The unstoppable force! The immovable object! The best armor-piercing munition available! The best armor protection available! All these statements have been used to describe depleted uranium or DU. Negative statements also have been made about DU and the hazards associated with it. The following paragraphs relate what I believe every soldier should know about DU. Keep in mind, I write from a training developer's perspective and not as a scientist, so readers who are sticklers for detailed data may be disappointed. Hopefully, those of you who just want the facts will get some satisfaction from what is presented here.

Background

During *Operation Desert Storm* U.S. military forces used DU munitions and armor in combat for the first time. The effectiveness of both the munitions and the armor were unmatched by anything available to allies or opposing forces. Figures available indicate that thousands of Iraqi tanks and other vehicles were damaged or totally destroyed by DU munitions fired from U.S. tanks, fighting vehicles, and aircraft. Not a single U.S. tank and only a half dozen fighting vehicles were lost to Iraqi fire.

After the war, a government-sponsored report stated that most U.S soldiers were not fully aware of the potential hazard associated with DU residue found on the battlefield. To rectify this deficiency, the U.S. Army Chemical School was tasked to assume the lead in developing a training program. This effort, done in coordination with the U.S. Army Ordnance Center and School, was completed in 1996, and training was implemented early in 1997. During and subsequent to the development of the DU training materials, several medical and scientific studies were conducted to analyze the effects of DU on the health of personnel wounded by or exposed to the effects of DU. After analyzing the results of these reports and studies, the 1998 Medical/Chemical Review Conference recommended that a joint effort be initiated to revise the DU training materials to more accurately reflect health and safety hazards.

What Soldiers Should Know

Soldiers in the field need to understand two important points that justify the use of DU:

- DU is the best armor-piercing material available for use in a variety of kinetic energy anti-armor munitions. This is because DU is a very dense material (one and a half times the density of lead), and it "self sharpens" as it penetrates. This self-sharpening characteristic makes DU better than tungsten, which mushrooms as it penetrates. Additionally, DU is pyrophoric, which means that as the penetrator self-sharpens, the small particles that flake off can ignite spontaneously in the air. The sparks produced often ignite fuel or munitions contained inside the target, giving DU rounds the capability to cause explosions without being an explosive.

- DU provides the best armor protection available. This is because of the density of the material. Plates of DU are sandwiched between outer and inner steel plates on "heavy armor" versions of the M1A1/A2 Abrams tank and provide greater protection than solid steel, alloys, or laminates, and they can defeat most currently fielded, non–DU antitank munitions.

Several weapons systems use DU. The most common DU round fired by the Army is the 120mm M829-series round for the main gun of the Abrams tank. For those who appreciate minutia, the official terminology is Armor–Piercing Fin Stabilized Discarding Sabot (APFSDS), but most people call it the "sabot round" (Figure 1). The dart-like penetrator rod is fitted with an oversized non-metallic collar that ensures a proper fit in the gun barrel. The collar falls away as the round leaves the barrel, which allows the penetrator to travel at an extremely high velocity and retain considerable downrange energy. Older versions of the Abrams tank fire a 105mm DU round. The M2/M3 Bradley fires a 25mm round in the Bushmaster cannon.

Other services also use DU rounds. The Air Force A-10 Thunderbolt uses a 30mm DU round in its main gun while the Marine AV-8 Harrier fires a 25mm round. The Navy uses DU in a 20mm round fired by the Phalanx gun system.

Tests and combat action have demonstrated the value of DU as an effective enhancement to the armor of the M1-series tank (Figure 2). DU plates inserted

Figure 1. The M829-series 120mm rounds come in a variety of forms. All can be fired from the M1A2 tank.

between regular steel armor on the front of the turret can defeat most known non-DU armor-piercing munitions.

The Problem

Since DU is the best weapon and the best armor, what's the problem? DU is a slightly radioactive heavy metal. It is 40 percent less radioactive than natural uranium. DU is primarily an alpha emitter, but it also emits small amounts of beta, gamma, and X-rays. The heavy metal aspect makes it chemically toxic, like lead. Ingesting a large amount of DU residue into the body by either breathing it into the lungs or swallowing it into the digestive tract is a primary hazard. Tests show that the only time this is likely to occur is when a soldier is: (1) in or near an armored target that is struck by a DU round; (2) in or near a heavy armored tank that is breached by any kind of round; (3) near a fire involving DU munitions; or (4) frequently entering vehicles that have been hit by DU rounds or have DU armor that was breached.

Soldiers who handle bare DU penetrators found on the battlefield also are exposed to significant amounts of DU. (Of course, every soldier knows it is inappropriate to handle any type of battlefield debris unless directed to do so.) I do not discuss embedded fragments because medical personnel treat these injuries in much the same manner as wounds from any type of shrapnel. Studies of soldiers wounded by DU fragments have failed to identify any adverse health effects specifically related to the radiological or chemical characteristics of DU.

In its "packaged" or unfired form, DU ammunition presents very little hazard. Soldiers may hold an unfired 120mm round for 940 hours without exceeding the total body exposure limit of 5 rem per year. Once fired, DU presents a greater hazard, but one would have to hold a DU penetrator in his bare hands for more than 250 hours before exceeding the exposure limit for skin or extremities of 50 rem per year.

For DU to be a hazard to personal health, the body must contain enough DU to cause radiological damage to the lungs or digestive tract or to cause toxic chemical damage to the kidneys. Protective measures should be taken to prevent exposure. There is not much a soldier can do to prevent some exposure if his vehicle is hit by a DU round or his heavy armor tank is breached. Just realizing he is still alive probably will be the most important thing at the time. But, soldiers near a DU round strike or armor breach can take protective measures.

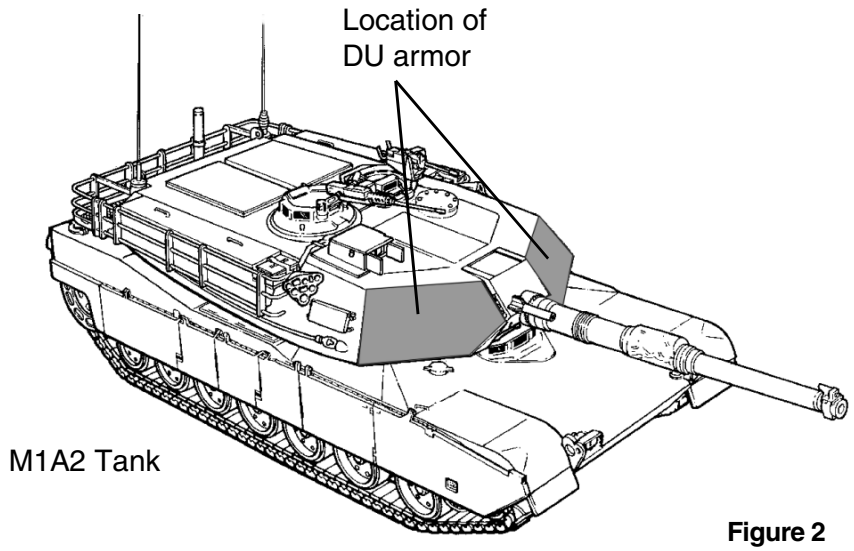

Figure 2

Protective Measures

Inhaling or ingesting DU in amounts experienced in battle does not pose an immediate health risk and must not prevent a soldier from saving his buddy's life or from continuing the fight. Wearing an M40 protective mask is the easiest and most effective way to prevent inhalation of DU dust and residue suspended in the air or in smoke from a DU munitions fire. Other types of respiratory protection are being evaluated for maintenance personnel who must work for extended periods inside damaged armored vehicles. To keep from ingesting DU residue, soldiers must keep it out of their mouths. Cover all exposed skin and wear gloves to keep the DU off and wash hands and face after being around DU to keep it from getting into your mouth and digestive tract.

If soldiers must remain in an area where DU is present, wear a protective mask and cover all exposed skin. Soldiers in a confined space, such as the crew compartment of a tank, should decontaminate the area to remove as much DU dust and residue as possible. The new *FM 3-5, NBC Decontamination* (to be published in second quarter of FY00*),* addresses DU decontamination. As with other decon efforts, the intent is to remove as much of the hazard as possible. This is best accomplished by vacuuming the vehicle with a high-efficiency particulate air (HEPA) filter-equipped vacuum cleaner. Since few organizations have this vacuum, *FM 3-5* describes a wet wipe-down procedure. The residue from that decon procedure will contain DU, and it should be treated like any other hazardous waste: bagged and tagged and handled in accordance with the unit SOP.

Numerous medical tests have been conducted and are being conducted to assess the potential health effects of DU on veterans who were exposed during the Gulf War. To review this data, go to web site *(http://www.gulflink.osd.mil/library/randrep/du/cover.html)* and access "A Review of the Scientific Literature As it Pertains to Gulf War Illness: Volume 7, Depleted Uranium" (RAND Report).

An extensive effort has been completed recently to provide updated, accurate data to all soldiers concerning the potential hazards of DU and protective measures that should be taken by those exposed to DU dust and residue. Data show that DU is only a hazard in very specific instances and should not prevent actions to save lives or to continue the mission. All soldiers will receive Tier I — DU General Awareness Training — either during attendance at a resident school or as common task training in their unit. This block of instruction is approximately one hour long and includes a 15-minute video. The new *Graphic Training Aid (GTA) 3-4-1A, Depleted Uranium Awareness*, supports the general awareness training and common task testing. These training materials emphasize a few basic points:

- No additional protective measures are required for unfired DU munitions or intact armor.
- Never allow the presence of DU to interfere with efforts to save lives or treat the wounded.
- Never allow the presence of DU to interfere with the conduct of combat operations.
- Do not handle DU or other battlefield debris unless directed to do so.

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Tips on Mentoring a CTLT Cadet

You Can Use the Cadet Troop Leadership Training Program To Give Future Leaders a Realistic View of Platoon Responsibilities

by Captain Keith A. McKinley

Every summer, a unit can expect to receive one or more cadets under the CTLT (Cadet Troop Leadership Training) program. The CTLT program allows cadets to apply the principals and theories they have learned in an academic environment to situations and soldiers found in real world units. Cadets will either come from the USMA (United States Military Academy) or college ROTC (Reserve Officer Training Corps) programs. Their time with active duty units is typically limited to one month. That does not give them a whole lot of time to learn the duties and responsibilities of a platoon leader.

To set a cadet up for success, a company commander should choose his *best* lieutenant to sponsor the future officer. Once a lieutenant receives this additional duty, this should be his top priority and all other duties should be secondary. The reasoning behind this is simple. Cadets are the future of the Officer Corps. The better the training leaders receive as cadets, the higher their performance level will be as lieutenants.

Before a cadet arrives at a unit, it is important for a lieutenant to establish a set training plan in which the future leader can actively participate. A checklist is one way for a sponsor to better organize the time a cadet will spend at the unit. Also, leaders need to prepare the unit for the arrival of the cadet. Many younger soldiers have never worked around cadets before, so it is a good idea for a unit to brief its personnel on how cadets should be treated during their stay at the unit.

Having mentored and trained CTLT cadets in the past, I have listed six areas I believe are important in the training of cadets during their short time with an active duty unit. They are the following:

1. Allow the cadet to become the *actual* platoon leader. The best way to learn the job of a platoon leader in the little amount of time a cadet has in the unit is to "throw him into the fire." Turn over command to him and let him go, remembering to give up only the control of your platoon but not the responsibility. Be sure to expose the cadet to all administrative and tactical aspects of being a platoon leader (especially the negative ones). There is no bigger waste of a cadet's time than to follow a lieutenant around, doing nothing, or to become a lieutenant's personal secretary. He or she has sat in a classroom for years studying how to lead; now is his or her chance to apply these theories to real-life scenarios. In turn, the cadet will be able to fine-tune his or her leadership style.

2. Provide constant performance feedback. As stated above, a cadet should be given the *full effect* of being a platoon leader; however, a lieutenant just cannot let the future leader run wild and free in the battalion! This is where performance counseling is needed, at least daily. Remember that the cadet is conducting his or her own internal experiment with his or her leadership ability. Constant feedback is the only way a cadet will learn what works best and eliminate the action or style that is ineffective.

3. Teach combined arms. When I was a cadet, I remember memorizing all seven Battlefield Operating Systems (BOS) for an upcoming test without really understanding how these systems actually worked. CTLT is the best environment to show the cadet how we fight as a combined force. Take him on a ride around post and introduce him to some of the engineers, air defenders, logisticians, etc. Do not go into extreme depth on each system, but give the cadet an actual understanding of an abstract idea that he or she has learned in school.

4. Teach/instill unit history and pride. One way to do this is to take the cadet to your post museum. Guide him around and point out displays that apply to your specific unit. This will teach him or her the impact your unit had on history. Show the cadet that ours is a noble and honorable profession that has endured for years!

5. Introduce him/her to key players within the battalion. The cadet should not spend his whole time learning at company level. Take the cadet up to battalion headquarters for introductions to the various staff sections (S1, S2, etc.), and ask section leaders to describe their function in the battalion and how they support the battalion's companies and platoons. Also, introduce the cadet to the specialty platoon leaders (scout platoon leader, mortar platoon leader, etc.) in the battalion, and have them explain their responsibilities within the battalion just as the staff did. Remember, the cadet needs only a *brief* description of these positions; the last thing a lieutenant wants to do is overwhelm a young cadet with information about the staff and specialty areas. Save this for when he or she becomes a lieutenant!

6. Get some work out of him or her. Remember that CTLT is not a one-month vacation for a cadet. He or she is there to work and learn. Use their time in the unit wisely to benefit the Army! I can guarantee that CTLT will be a miserable time for cadets, as well as lieutenants, if we waste their time and the Army's.

In summary, the training and experiences cadets receive during CTLT will remain with them for the rest of their career. Take the time and effort to show the cadet how a real unit operates and functions. Consider the time you spend now as an investment in the future leadership of the Army.

CPT Keith A. McKinley currently serves a company commander in C Company, 1-9 IN. Prior to command, he served as the assistant operations officer for the UNCSB-JSA (Pan Mun Jom). He also served as a rifle platoon leader, support platoon leader, and anti-armor XO in 3rd Battalion, 327th Infantry, 101st Airborne Division (Air Assault). He was commissioned through the ROTC program at Chicago State University and holds a degree in mathematics from Indiana University Northwest.

Contingency Contracting — A Commander's Logistics Force Multiplier

by Major John Shannon Womack

What do the National Training Center, Kuwait, Bosnia, Kosovo, Qatar, and Saudi Arabia all have in common? In each of these diverse locations, contractors are providing vital support to U.S. soldiers as they conduct training and execute contingency operations. In today's operational environment, contracted support is an integral part of day-to-day operations during deployments. Commanders can expect that contracted support will be key to their success during training and contingency deployments.

Commanders and their staffs play a key role in determining the quality and timeliness of the contingency contracting support they receive. To ensure adequate contingency contracting support, commanders and their staffs need to have a good working knowledge of how contingency contracting works, their role in obtaining contracting support, and how to integrate this support into their overall scheme of support. This article provides a doctrinal view of contingency contracting for brigade and task force commanders and staffs.

New Doctrinal References

FM 100-5 states "doctrine is the statement of how America's Army… intends to conduct war and operations other than war."[1] *Field Manual 100-10-2, Contracting Support on the Battlefield,* published in August 1999, describes the Army's doctrine for contingency contracting. This new manual was written as a user's manual for units being supported by contingency contracting. It provides a doctrinal overview of contracting support for deployed forces, then goes into detail on how units should plan for contracting support, obtain contracting support, and lists supported unit responsibilities in the contracting process.

Terms and Definitions

Before getting to the process of contingency contracting, it is important to have a common understanding of key terms. *FM 100-10-2* defines *acquisition* as the process by which the Army obtains the materiel and services required to accomplish its mission.[2] Deployed commanders can acquire resources though several sources: the Army's supply system, host nation support, the unit IMPAC credit card, and contingency contracting. The Government Contracts Reference Book defines *contracting* as purchasing, renting, leasing, or otherwise obtaining supplies or services from non-Federal sources.[3] *FM 100-10-2* defines *contingency contracting* as the process by which essential supplies and services needed to sustain deployed forces are obtained on behalf of the U.S. Government.[4] Contingency contracting is a subset of acquisition. It is intended to supplement organic combat service support (CSS) capabilities.

Contingency contracting officers provide contingency contracting support to deployed forces. *FM 100-10-2* defines the contingency contracting officer as an official with the legal authority to enter into, administer and/or terminate contracts.[5] Contingency contracting officers operate primarily under Title 48 of the Code of Federal Regulations, also known as the Federal Acquisition Regulation or FAR, the Defense FAR Supplement (DFARS), and the Army FAR Supplement (AFARS). These regulations require contingency contracting officers to operate in accordance with federal law and regulations when conducting contingency contracting.

The Contingency Contracting Officer

Contingency Contracting Officers (CCOs) deploy to support soldiers. Normally they are among the first soldiers to deploy into an area of operations and the last to leave. This is critical since the contingency contracting officer is needed to support advance parties, as well as put contracts in place to receive and support the influx of troops and equipment as the main body arrives. After operations terminate and the bulk of soldiers depart the area of operations, the CCO remains behind to close contracts and ensure vendors are paid.

Contingency contracting officers are normally assigned to divisions and corps. However, by doctrine, when a CCO deploys to an area of operations, he falls under the control of the area Principal Assistant Responsible for Contracting (PARC) and augments the local contracting office or establishes a contracting office to provide support to deploying forces. The local director of contracting will provide the CCO with required legal and administrative support if there is a local contracting office established.

The CCO's authority to contract follows a different line of authority from the traditional chain of command. The chain of command normally flows from the Unified Commander to the Army Service Component Commander and ultimately to the Task Force Commander. The authority to obligate the government through contracts flows from the Secretary of the Army to the Head of Contracting Activity, to the theater Principal Assistant Responsible for Contracting, to the contingency contacting officer. Before the deployed contingency contracting officer can begin writing contracts and obligating the government, the theater PARC must issue the contingency contracting officer a warrant to contract in the PARC's area of operations. Home station warrants are normally not valid in overseas areas of operations.

The Key to Successful Contingency Contracting Support

The key to successful contracting support begins with unit key leader training at home station before deployment. Key leaders need to have a good understanding of the contingency contracting process, know how to write statements of work, obtain sources of funding, and what contingency contracting can and can't legally provide. Like any other Army process, good contingency contracting requires thorough prior planning. As much as possible, before units deploy, they need to identify their requirements and plan for how they will acquire them once in the area of operations, either through the Army supply system, host nation support, unit IMPAC credit cards, or contingency contracting. This plan becomes the acquisition support plan and

should be an annex to the deployment operations order.

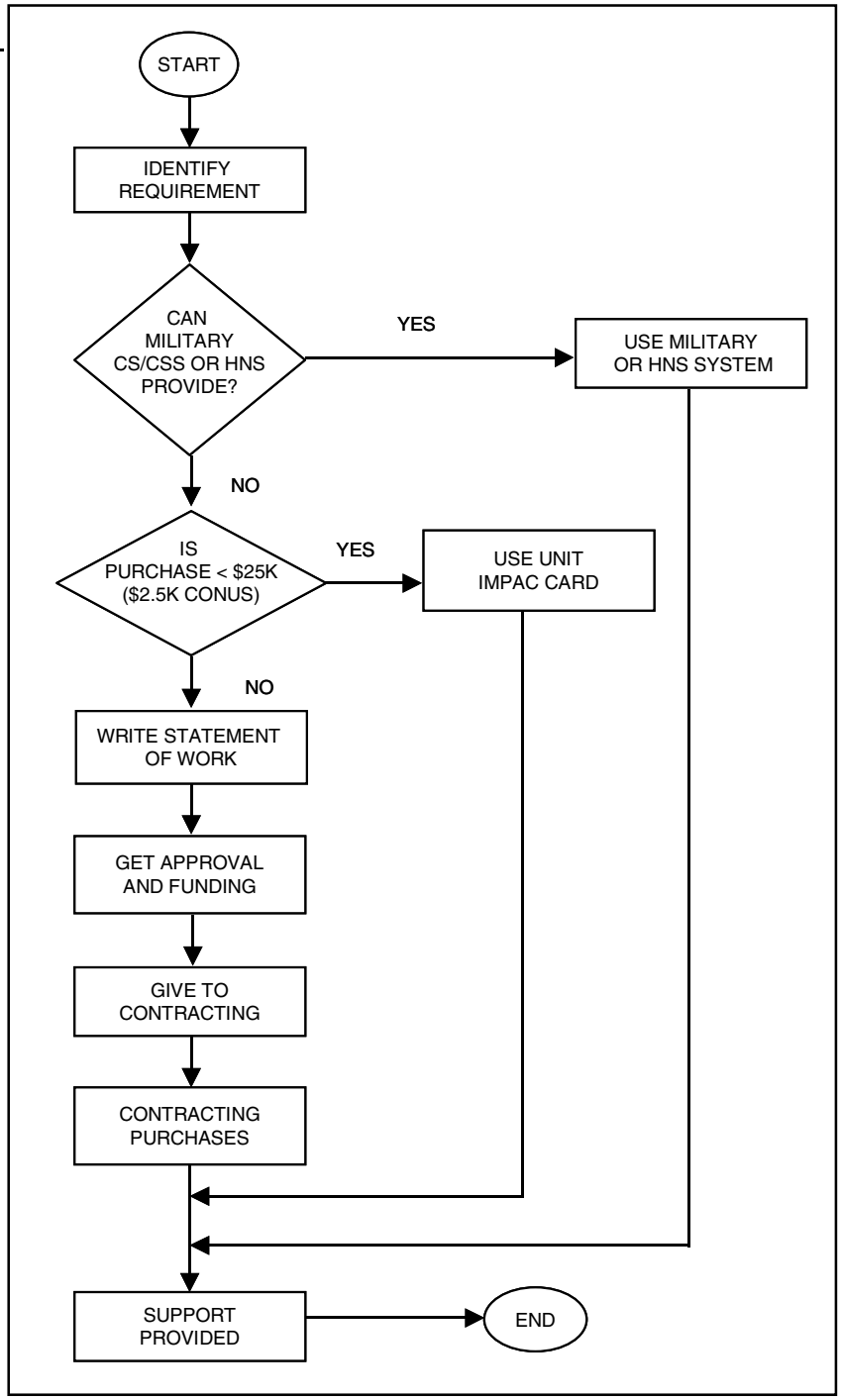
FM 101-5, Staff Organization and Operations, provides a sample outline for a service support annex to an operations order.[6] This sample annex doesn't specifically address contingency contracting support. However, many of the materiel and services listed in the annex may be provided by contract support. Under each materiel and service, the service support annex drafter can note if that materiel or service will be provided by contract support. The service support annex is also a good place in the operations order to detail the process specific to that mission for obtaining contract support. Going into this kind of detail in the planning stage of the operation causes the supporters to address such questions as what is available through contract support, what is the process for obtaining such support, and what is the process for obtaining approval and funding for the support.

The annex can also list information on what support the unit intends to acquire through unit IMPAC credit cards and the process for making those purchases.

The Contracting Process

The flow chart at right depicts the contracting process as it applies at the brigade and task force level. The acquisition process begins when the unit (the requiring activity) identifies a need for support services or supplies (the requirement). At the brigade or task force level, the S4 is the key unit player in the acquisition process and is usually responsible for managing the requirement determination process. The S4 determines if the unit can receive the requirement through Army supply channels or through host nation support (HNS), in the required quantity and quality, in the available amount of time. If the requirement is available through traditional Army supply channels or through host nation support, the S4 places a requisition and receives the needed supply or service.

If the requirement isn't available through either of these sources, the S4 determines the projected cost of the requirement. If the unit is deployed outside the continental United States and the supply or service is available from a commercial source also outside the continental United States for under $25,000, a unit IMPAC cardholder should make the purchase.[7] If the unit is located inside the Continental United States or the requirement must be purchased from a vendor located within the Continental United States, this limit drops to $2,500. If the S4 determines that the requirement can't be filled for less than $25,000 ($2,500 CONUS), the unit must initiate the formal contracting process.



The unit initiates the formal contracting process by writing a detailed statement of work, obtaining a cost estimate, and completing a purchase request (PR&C, usually a DA Form 3953) for the estimated cost of the requirement. The statement of work provides a description of the requirement through specifications, quantities needed, dates, and delivery location. The statement of work can be as simple as a statement of how many units of a particular item a unit needs, when it needs them, and where to find detailed engineering drawings or detailed descriptions of services. If the statement of work is brief, the requiring activity can write the statement of work on the purchase request or attach the statement of work to the purchase request. The key is that the statement of work provides enough detail for the contracting officer to purchase what the unit needs.

The cost estimate is an independent government estimate of the expected cost of obtaining the requirement. The cost estimate determines the amount of money requested on the PR&C. Units can get price estimates by surveying the local market or using prices from recent purchases of similar requirements. The local contracting office is a good place to visit for price estimate information and information on the local market.

The purchase request serves as the vehicle for approval and funding. A good purchase request provides important information for the person making the purchase. The purchase request should have the name and signature of the person in the unit authorized to approve purchase requests, the name and phone number or location of the unit's point of contact for the requirement, and the amount of funds the unit is requesting for the purchase. The unit gets the purchase request approved by the person authorized to make final approval for purchases in the area of operations. Usually this process also includes routing the PR&C by the local property book officer to ensure that non-expendable items are recorded on the unit's property book during the receiving process. Finally, the requesting activity gets funds certified through the designated resource management or comptroller office. It is the requiring activity's responsibility to provide a statement of work, the cost estimate, and the approved purchase request with certified funds to the contracting officer.

Funding

Resource managers can provide funding for individual purchases on individual PR&Cs or they can provide *bulk funds*. Individual PR&Cs can be used to fund individual IMPAC card purchases under $25,000 as well as formal contracts. On the other hand, bulk funds provide authorization for IMPAC card holders or contracting officers to make multiple purchases against a specified fund cite without going through the PR&C process for each purchase.[8]

When contingency contracting officers deploy to prepare for arrival of main body forces, it is critical to the success of the mission that they receive bulk funding authority prior to their deployment to cover all contracting requirements for the first 30 days.[9]

Contracting Officer Purchases the Requirement

After the contracting officer receives the statement of work and funded purchase request, he or she will purchase the supply or service. In a mature environment, the CCO may purchase the item locally through an existing agreement with a local vendor or by initiating a new contract (purchase order). If there is a stable banking system, an Army finance office will make payment electronically to the vendor's bank. In an undeveloped environment, where there may be no local banking system or stable currency, the CCO may make the purchase using a Standard Form 44 as the contracting document and pay the vendor with cash through a Class A agent.

In an environment such as Somalia in '92/'93, where there is no local infrastructure and nothing available for purchase, the CCO may purchase supplies and equipment from neighboring countries and have them shipped into the local area of operations. The CCO can also purchase supplies and services from vendors in the U.S. either by phone, fax, or Internet.

Additional Players in Contingency Contracting

In a large-scale deployment, contingency contracting officers cannot personally make all the purchases for the deployed units they support. Currently, divisions are assigned at most, two contingency contracting officers. Desert Shield/Storm, Restore Hope, and Operation Joint Guard showed that it takes approximately ten contingency contracting officers to adequately support a division-size unit of approximately 15,000 soldiers. Even after augmenting contingency contracting offices with CCOs from corps and undeployed organizations, there is a contracting capability shortfall. This shortfall is offset by the use of field ordering officers (FOOs) and contracting officer's representatives (CORs) supplied by supported units.

Field ordering officers are trained by contracting officers, and appointed in writing by the chief of the local contracting office. They make purchases against a specific fund set up by the CCO. FOOs are supplied by the supported unit and usually are appointed for a particular type of supply. An example is a mess NCO appointed as a FOO to order certain types of food items for a mess hall.

Contracting officers can't be everywhere at once and are not experts on each of the many types of supplies and services they purchase. For these two reasons, CCOs appoint contracting officer's representatives. CORs come from the supported unit, usually are very knowledgeable on the supply or service they're appointed for, and act as the eyes and ears of the contracting officer. CORs ensure the contracted supplies and services are delivered on time, to the right location, in the right quantity and quality. They fill-out receiving reports and notify the contracting officer if something is wrong with a delivery or service. The specific responsibilities and limitations of the COR's authority is specifically spelled out in their appointment orders from the CCO.

If a unit finds itself in an area that lacks a solid banking infrastructure where vendors will only accept cash payment, the CCO may require the use of a Class A agent. The Class A agent may come from the supported unit, is usually armed, carries large amounts of cash, and pays vendors for supplies and services purchased by the CCO. CCOs cannot act as Class A agents and they should not act as receiving agents for supplies or services for which they contract.

IMPAC Credit Cards

During a contingency deployment, unit IMPAC credit cardholders are a critical resource for acquiring supplies and services for the deployed unit. Cardholders can make purchases quickly and by involving the end-user, cardholders ensure that the right item or service is purchased. Recently, the Department of Defense enacted Defense Federal Acquisition Regulation Subpart 213.301. This DFAR revision raises the micro-purchase threshold (the limit for IMPAC cardholders to make simple over-the-counter purchases) from $2,500 to $25,000 for commercial purchases made outside the U.S. for supplies or services to be used outside the U.S. The majority of task force level requirements fall under the $25,000 micro-purchase limit.

In addition to speeding up the acquisition process, use of the IMPAC card also saves the Army money. The Army Audit Agency has found that the Army saves an average of $92 per purchase in processing costs when a unit uses an IMPAC card rather having a contracting officer execute a purchase order.

Deploying units can assign deploying personnel additional duties as card-

Continued on Page 56

The United States Army, National Guard, and Reserves: Can the One-Team Concept Mean One *"Equal"* Team?

by Captain Michael L. Scholes, Sr.

(This article also appeared in the Winter 2000 edition of *National Guard Review*.)

The Army recently announced the need to involve Reserve Component units in the NATO stabilization role in Bosnia. Since 1989, the number of Army deployments has grown by over 300%, yet the Army's Active Component (AC) and Reserve Component (RC) strength have shrunk by over 40%.[1] This reality has forced the Army to develop a strategy that involves maximum participation of RC units to help ease the burden on the active force. Should this be necessary? Should the Department of Defense (DoD) expect the RC force to play such a pivotal role in our nation's defense, or are they asking too much of a part-time force in a peacetime Army?

The need for more soldiers participating in Operations Other Than War (OOTW) missions has increased dramatically over the last decade since the end of the Cold War. This reality was not fully appreciated or anticipated by our government when legislation was passed, pushed by the Clinton Administration, that aggressively undercut the manpower and budget of the military. Because of these budgetary policy changes, the ability of the AC to deploy and fight in two separate Major Regional Conflicts (MRCs)[2] has been diminished. Congressional testimony by DoD officials and the Joint Chiefs of Staff put into question the United States' ability to meet this policy. Also, added to this MRC reaction capability is the increased use of our forces in OOTW operations around the world, including Somalia, Haiti, Bosnia, Kosovo, etc. This policy change to use American soldiers as Stabilization Forces (SFOR) was not planned nor anticipated when the two-MRC criterion was established.

This ability to respond to so many contingency operations has placed stress on an active military that has seen resource cuts by as much as one-third of its size since the Gulf War. The missions have increased since the Gulf War, but the resources have diminished. The core mission-essential units in DoD are already feeling the effects of this policy. For example, the Air Force is experiencing tremendous readiness issues because pilots who complete their initial obligation are resigning their commissions to make more money in the commercial airline industry, without having to deploy for months at a time. Air Force capabilities were stressed by recent air strikes in Kosovo, Yugoslavia, while maintaining air patrols over Iraq. This need for aircrew deployed to both theaters was taxing for many of the pilots who had to fly these missions. All branches of service are experiencing similar circumstances and are struggling to fill the holes in the dike. This reality is forcing a DoD policy change that uses more and more reserve forces in active missions, such as peacekeeping operations, while active forces concentrate on maintaining readiness to react to possible MRC missions or contingency operations.

The RC is made up of the Army Reserve, Army National Guard, Air Force Reserve, Naval Reserve, Marine Corps Reserve, Air National Guard, and the Coast Guard Reserve. The RC has always played an instrumental role in our nation's defense. They are counted on to provide the necessary leverage to offset the risks of a smaller active duty force.[3] Historically, the RC has been used more in combat support roles, but the need to fill the gaps left by a shrinking active force has caused a change in policy by the DoD. Now, buzz words by the Army leadership describe the AC and RC units as the "Total Force" or "The Army" or "One Team" in an attempt to change the stigma that has been viewed toward the RC force by the AC force. General Eric K. Shinseki, as part of his remarks at a ceremony welcoming him as the 34th Chief of Staff of the United States Army, stated:

Today, I declare that we are **The Army** *— totally integrated, with a unity of purpose — no longer the Total Army, no longer the One Army. We are* **The Army,** *and we will march into the 21st century as* **The Army**. *We acknowledge our components and their unique strengths. But we are* **The Army**, *and we will work to structure ourselves accordingly.*[4]

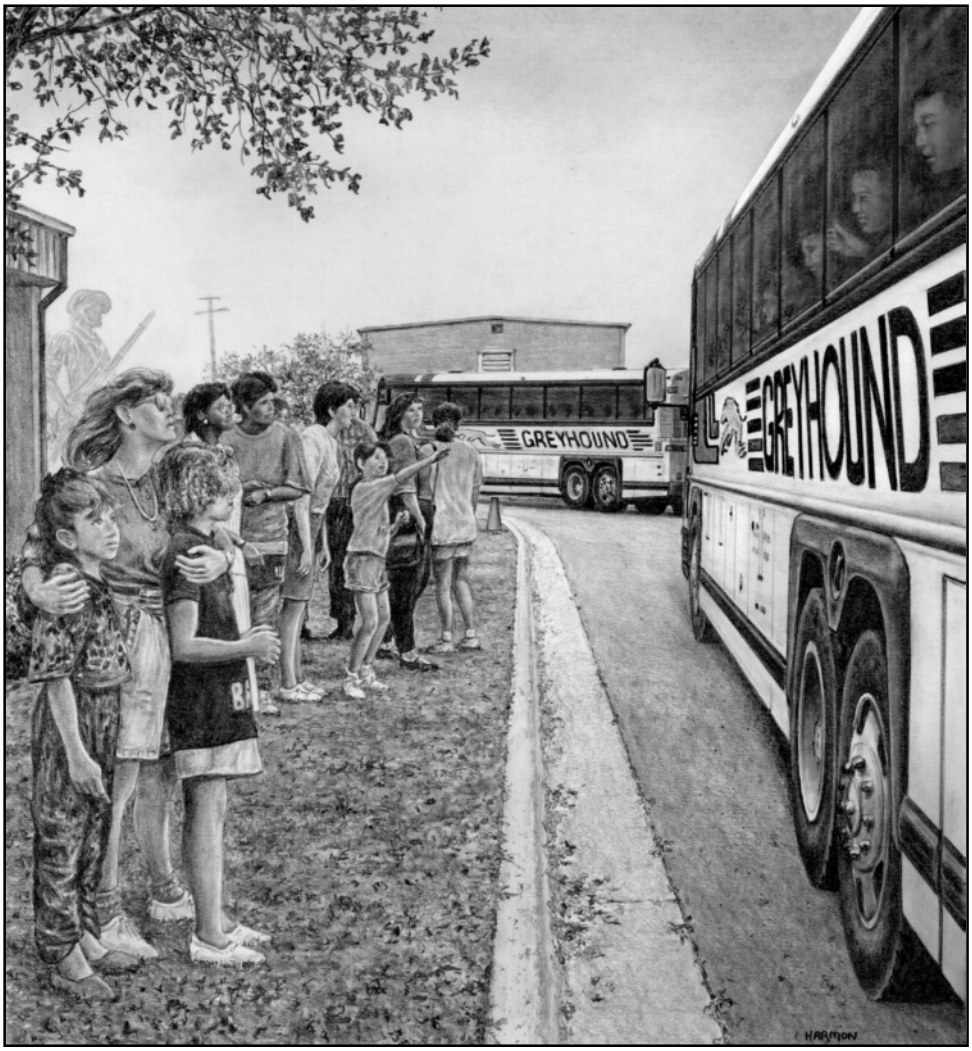
There are two ways in which DoD can use the RC in peacetime. Federal law provides the President with the ability to order reservists involuntarily to active duty for 270 days. (10 U.S.C. 12304) This process is known as the Presidential Selected Reserve Call-up (PRSC) authority. The other way is for the individual reservists to volunteer for a specified mission or duty. With the mission of the RC changing to fit the *One Team* concept, the need for them to accept more long-term operations, relieving the burden on the AC, is becoming more and more necessary.

The Army recently announced specific RC units for service in Bosnia as part of the NATO Stabilization Force. The 49th Armored Division, headquartered in Austin, Texas, is a National Guard unit that is already part of the SFOR mission in Bosnia. Other National Guard units have been notified or alerted that their units have been chosen to support this OOTW operation. This call-up is significant in the fact that whole units will be called for nine months, severely affecting the communities where they are located. In wartime or other national emergencies, this reality would be expected and anticipated. However, should it be necessary or expected that a RC unit would deploy for such a length of time because of a depleted active force?

The Army Vision expects its forces to dominate any force or enemy that threatens our nation:

The Army will be responsive and dominant at every point on that spectrum. We will provide to the nation an array of deployable, agile, versatile, lethal, survivable, and sustainable formations, which are affordable and capable of reversing the conditions of human suffering rapidly and resolving conflicts decisively. The Army's deployment is the surest sign of America's commitment to accomplishing any mission that occurs on land.[5]

The question remains as to how the RC force should meet this vision statement.



There is no question as to whether the RC can benefit from deployments on "real world" missions. In 1998, service members participated in 178 projects in 39 states in fiscal year 1998 and in more than 200 projects during fiscal year 1999. The Innovative Readiness Training Program (IRTP), established in 1993, involved the Guard in a majority of the programs that help to support the President's Rebuild of America program. The program provided reserve units the ability and flexibility to maintain readiness and act in concert with the "Total Force." However, these deployments involved smaller units for less time than a NATO Stabilization Force will require. The policy of involving more and more RC units in long-term peacekeeping missions to supplement the mission load of the AC will not survive the test of time.

The "One Team" concept, though good in theory, cannot mean one equal team performing the same role — active does not equal reserve. If it did, why have the AC? The more the DoD tries to make the National Guard and Reserve equal members of the same team, the quicker the policy will fail. There is just so much the government can ask of the local business leaders, entrepreneurs, families, and the communities of these part-time servicemen trying to perform in a full-time role. The more these entities are treated as equal partners on the same team, the more the differences between the two contrasts — same team, but not equals.

A typical RC unit is composed of public servants (mainly law enforcement personnel), entrepreneurs, full-time college students, business leaders and employees, and a myriad of other positions in which the servicemen fill managerial roles. Their parent organizations have supported these employees through countless deployments, weekend training events or IDTs, call-ups, and annual training (AT) exercises. Asking them to accept yet another exercise that is longer in duration (nine months, including the unit's train-up to prepare for deployment), which is not national defense-critical, may be asking them to swallow one bitter pill too much.

In peacetime, the RC should have limited involvement in the same missions the AC performs during real world deployments, training events, SFOR missions, or other readiness exercises. These limited call-ups would help to prepare the RC units for possible national emergencies and defense missions in accordance with their mission. There is no question that history has taught us that a robust citizen soldier force is vital to the nation's preparedness in case of a threat to our national defense. However, there needs to be clear separation between the missions of the AC and RC force — they are not equal. The expectations of the DoD and the expectations of the American public and private sector should balance. Sacrifices will have to be made by all sides, including Congress and the White House.

There are many possible solutions to help create balanced expectations. The most important involves the defense budget, which gets axed, trimmed, attacked, and filibustered every year. The defense budget is the easiest budget line to get cut or manipulated during every budgetary session.

Even the most efficient use of resources cannot compensate for a lack of resources… Defense spending accounts for ***3.0 percent*** *of GDP and is declining — the lowest since Pearl Harbor—while the armed forces are as busy as ever.*[6]

It's easier to tell the soldier he has to do without than to tell the same thing to a particular voting district. The American public demands, and the Constitution dictates, that the United States' legislative and executive branches provide for the nation's defense. To do that effectively, they need to provide the resources necessary to keep the military well fed, trained, and manned to accomplish any mission that the President and/or Congress deems in our best interest. Soldiers do not care about the politics involved in the execution of policy by either of those sacred bodies. However, we [the American public] expect the Army leadership to be given the resources necessary to effectively accomplish any mission. Also, our leaders are equally expected to take care of those soldiers in their charge who are expected to carry out the missions assigned. MG Edison E. Scholes (USA, Ret.) once said that:

…This country never meant for anybody but the best, the most dedicated, the most

"The United States Army, National Guard, and the Reserve make a powerful combination. This triad has proven its ability to win on the battlefield, but let's not forget the particular role they play and how they affect our society."

selfless — to have the power of life and death over those they lead and those that must go in harm's way to represent what this country stands for…[7]

The government is entrusted to ensure the AC and RC is prepared for any calling. Let's not forget history that demonstrates how legislative actions and policy manipulation seriously undercut defense spending, compromising the readiness of the armed forces and their ability to react to provoked attacks; December 7, 1941 (WWII), Task Force Smith (Korean War), and the Tet Offensive (Vietnam). In *We Were Soldiers Once and Young,* Colonel Harold Moore chronicled how seasoned War World II and Korean War veterans were rifted after each conflict, affecting his unit's readiness just before it was to deploy to Vietnam.

We were the children of the 1950s and John F. Kennedy's young stalwarts of the early 1960s. He told the world that Americans would go anywhere, pay any price, bear any burden in the defense of freedom. We were the down payment on that costly contract, but the man who signed it was not there when we fulfilled his promise…[8]

His unit had been assembled, trained to a razor's edge, and then undercut just before it was ordered to combat. Its effects were devastating, resulting in needless loss of life, equipment, and material. The Vietnam War is remembered today as a war that was a political quagmire pitting the politicians on Capitol Hill against the commanders in the field who couldn't use the resources or doctrine at hand to fight and win.

If the necessary resources were made available to the AC, the need to involve the RC in more and more of the active roles would dissipate. The United States Army, National Guard, and the Reserve make a powerful combination. This triad has proven its ability to win on the battlefield, but let's not forget the particular role they play and how they affect our society. The roots of the RC run deep throughout the communities in which they belong. To think otherwise, not considering the long-term effects a peacekeeping deployment will mean for a community, is to take advantage of the trust that community and the nation places in its leaders. Politicians need to fix the problem of diminishing military resources. Soldiers are our nation's treasure and need to be given the proper resources, allowing them the ability to successfully accomplish the role they play in our nation's defense.

In conclusion, working as a team, the U.S. Army, National Guard, and Reserve are necessary forces to deter and eliminate the threats of the XXI Century. This triad, working together, creates the flexibility necessary to compete in a global theater while dealing with diminishing resources in the annual defense budget battle in Congress. However, it needs to be realized that the more these three components are made equals, the harder it will be to define the lines of mission responsibility in the future. It will also make it easier for the DoD to task a Reserve or National Guard unit for longer deployments, filling the void left by the AC, enhancing their expectations and dependence on the RC's increased role.

These forces are not equals, and should not be tasked as equals. The RC should be used to provide the AC the flexibility necessary to lessen the burden of an already overburdened mission load. The Constitution and the American people demand that we give the military the necessary resources to defend our great nation. This responsibility not only protects the nation but the soldiers who are expected to carry out that mission unselfishly — we owe it to them.

Notes

[1]*U.S. Army News Release.* Army Announces Unit Rotation Plan For Bosnia Release #99-100, October 26, 1999.

[2]When the Clinton Administration pushed for a Reduction in Force (RIF), they used the two MRC capability as a gage in determining the size of the active force. It was determined the force needed to be large enough to be able to support two separate major conflicts simultaneously.

[3]Department of Defense, Office of the Executive Secretary, National Guard and Reserve, Chapter 22, *http://www.dtic.mil/adr97/chap22.html*

[4]Reimer, Dennis J. General (USA Ret). *Intent of the Chief of Staff, Army.* Active/Reserve Component Integration Homepage, June 23, 1999, *http://www.paed.army.mil/acrc/oneteam/yellow9904.htm*

[5]*The Army Vision: Soldiers On Point for the Nation…Persuasive in Peace, Invincible in War.* Army Chief of Staff Homepage. December 29, 1999. *http://www.hqda.army.mil/ ocsa/vision.htm*

[6]*One Team, One Fight, One Future: Total Army Integration.* Active/Reserve Component Integration Homepage. *http://www.paed.army.mil/acrc*

[7]Scholes, Edison E. MG (USA, Ret.). Letter to the author. February 17, 1997.

[8]Moore, Harold G. LTG (USA Ret) and Galloway, Joseph (Contributor). *We Were Soldiers Once and Young.* Random House, New York. 1991.

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CPT Michael L. Scholes was commissioned in Armor from North Georgia College in 1988. He served as a tank platoon leader, executive officer, assistant S3, and support platoon leader for 3-73 Armor, 82nd Airborne Division. He was a SMO, commanded in the 1-16th Cavalry Regiment, and was the chief of Armor Platoon Training and Doctrine at Fort Knox. Following graduate school and an ROTC assignment at Georgia Military College, he became a senior trainer for the 1-108th Armor Battalion at Calhoun, Ga. He has completed the CAS3, AOAC, AOBC, Jumpmaster, Airborne, NBC Defense, and Air Movement courses.

The 49th AD Ships Out

Texas National Guard soldiers of the 49th Armored Division, recently called up to serve in the Balkans for a period of nine months, leave their jobs and families and board charter aircraft for the flight to Europe as the division's equipment is shipped out by sea.

Photo at left by John Randt, MTMC PAO
Other photos by MAJ Ronald J. Elliott, Task Force Eagle PAO

What to Make of National Guard Tankers?

Strong unit cohesion is a given...they've been together for years

by First Lieutenant Jim Sosnicky

When I left the Regular Army under the Voluntary Early Release and Retirement Program (VERRP) in 1995, I was required to complete my active duty service obligation (ADSO) in the Army National Guard.

My image of the National Guard had not been a good one. Kent State. Overweight slobs guzzling beer on the gunnery range. Draft dodgers who joined the Guard in the late Sixties and early Seventies to avoid service in Vietnam. Plus, how could a tank battalion be run on a part-time basis? While I had been assigned to 1-34 AR and 2-34 AR at Fort Riley, I'd observed that tanking was a full-time… correction… an over-time job. A company commander in 2-34 AR who had served in the Guard while going through ROTC in college told me that it was "a nice club to be in, but not much else." "Sir, I heard you're joining the Nasty Girl," a mortarman from HHC remarked as I was about to ETS. "God help ya."

So it was with much trepidation that I reported for duty as the executive officer of C/1-104 Cav, Pennsylvania Army National Guard, at Fort Indiantown Gap. A year later, due to a civilian job change, I reported for duty as the XO of yet another Guard unit, D/1-101 Cav, New York Army National Guard, in Newburgh, N.Y. I am still serving in this capacity.

I have been in the Guard for a few years now and have participated in enough weekend drills, annual training rotations, and disaster relief efforts to draw some conclusions about the quality of the citizen-soldier and the effectiveness of an Army National Guard armor unit.

Personnel

The first stereotype that I found to be untrue was the overwhelming presence of fat, beer-guzzling draft-dodgers. Never once have I seen or heard about alcohol being consumed in the field. The overwhelming majority of soldiers in the Guard units I have observed have prior active duty experience. Unlike the Vietnam-era Guardsman who may have joined to get out of going to war, many present-day Guardsmen are veterans of Operation Desert Storm. These are men who joined the Guard after their time on active duty because they wanted to maintain ties with the military, not men who joined the Guard to avoid combat. The difference is a fundamental one, and goes a long way toward explaining the professionalism of the modern Army National Guard. The majority of company grade officers in 1-101 Cav have prior active duty experience. Four of these young officers are graduates of West Point. Three of these West Pointers — the CO, the XO, and the third platoon leader, are in Delta Company. (Yes, I meant to say company. For some strange reason of lineage that I don't understand, our cavalry squadron has companies, not troops.) For the rest of this article, I will focus on Delta Company, as this is the unit about which I have the most intimate knowledge.

Ninety percent of Delta Company's members are former active duty soldiers. Fourteen are former active duty Marines. Former Marines are not unique to my unit. They pepper the duty rosters of many an ARNG unit. The frequent deployment of the Marine Reserve is a big reason that several of these few good men cross over to the Army. Another is the absence of a Marine combat unit nearby. Guys who were Marine infantrymen are now ARNG tankers. The Marines' loss is the Army's gain. Every Marine brings with him a duty-first, Semper Fi mentality that is quite comforting and inspiring to be around. The presence of 14 former Marines in our company stiffens our backbone quite a bit and adds tremendously to our professionalism.

About 75 percent of Delta Company is employed by the highway patrol, the state correctional system, and several municipal police and fire departments. Again, this is not rare. It has been my observation, while serving in two units and talking to soldiers from many more, that many active duty soldiers who ETS trade in their battle dress uniform for the uniform of a civil servant. They go from one disciplined environment to another. They leave one chain of command to enter another. The result is that these men never lose the "military mindset," which in turn adds to the professionalism of the unit. This mindset rubs off on those of us who do not work in civil service.

Whatever the civilian occupation, when a soldier leaves active duty he doesn't go into a vacuum. He gets a job, he buys a dog, he gets older, he finds a wife, he has some kids, he continues his civilian education, he often advances into management positions at work. All of these combine to make him a more mature, more intelligent, more able-to-take charge soldier. A sergeant who, in civilian life, has to manage a family and a mortgage and an office and his evening master's degree program is at least as mature and responsible as his active-duty counterpart.

Unit Cohesion

The men of Delta Company have served together for several years. One of the things that bothered me about an active duty armor unit — no matter what reasoned explanation I was given — was that you spend a year building a team through platoon and company lanes, gunnery cycles, countless hours in simulators, combined arms live fire exercises (CALFEX), and finally with a rotation at the NTC. And then, when you're finally all working together like a machine, PCSes and ETSes bust you all up, and you have to start building a team all over again. In the Army National Guard, promotion is slow and movement outside of one's battalion in limited. The positive result of this is that men spend more time working together, building tighter crews, platoons, and companies. A sense of heritage and tradition that develops only with shared time and shared events does indeed flourish in the National Guard. And while promotions are slow, the STAP program (Select Train Assign Promote) ensures that upward mobility does indeed happen.

One out of four weekends each month, a fourth of a Guard soldier's free time, is spent with his unit. Over half of our drills this year required us to take a Friday off of work, making a weekend drill actually

three days long. The Guardsman spends two weeks out of the year at an active duty post with his unit. And, in the case of Delta Company, the governor, at least once a year, mobilized us to do disaster relief, whether it was after a tornado in upstate New York or when a hurricane struck the lower Hudson Valley. Adding all of these together, and including weekly training meetings, a National Guard lieutenant or sergeant can expect to spend 100 days each year wearing a uniform. Most active duty folks don't realize that. Nor do they stop to think that this is all done on a person's free time.

Something else to consider: At Fort Riley, a quarter to a third of our time was devoted to post details and routine services. While it's true that a Guardsman spends more time out of uniform than he does in, it is also true that active duty tankers don't spend every day on a tank.

Solid Training in the Fundamentals

Each year, Delta Company tankers complete common task training (CTT), the tank crew gunnery skills test (TCGST), countless hours in the mobile conduct of fire trainer (MCOFT), and then either two weeks of gunnery at Fort Drum or two weeks of simulated maneuver training at Fort Knox.

This year, we will conduct one week of gunnery at Drum and one week of SIMNET at Knox. Our relative proximity to Fort Drum allows us to run through the preliminary tank tables during regular drill weekends. This past annual training (AT), we conducted a live-fire of the new Tank Table VIII at Fort Drum with observers from the 3rd ID making sure we trained to standard. Eleven of our fourteen crews qualified Q1, while the other three were Q2. When it comes to individual tank crew gunnery, we can hang with anybody; active or reserve. As far as platoon-level gunnery, we will be conducting a Tank Table XII for the first time this year.

As far as maneuver training, company-level SIMNET exercises are always a success. In terms of command and control, Delta Company is solid. What is untested, however, is our ability to maneuver over long distances on real tanks, in the dark and cold and rain, with malfunctioning radios and thrown tracks. A real weakness to be sure, but one that would be the primary focus of a 30- or 60-day train-up at the NTC prior to combat. It is also a challenge faced by the active duty, whose field time has been limited due to budget constraints. As the active component relies more and more on simulators and expends fewer rounds during fewer gunnery cycles, the gap between active and reserve narrows. Much coverage was given to the poor performance of National Guard tank units at the NTC during the time of Desert Shield/Desert Storm. As strange as is seems, that was nearly 10 years ago. Many of those soldiers were of the old Guard, pre-STAP, pre-drawdown ilk. The majority of company-level officers and men of today's Guard have been on active duty, and many served honorably with active duty units during the Gulf War.)

A quick note on equipment. Most Guard units train on M1 tanks. While not as hi-speed as its younger brothers, this tank serves its purpose when it comes to keeping current with maintenance procedures and gunnery skills.

Can National Guard drivers drive a tank? Yes. Can the loaders load, the gunners gun, and the TCs command? Yes, yes, and yes. Do they work well together as a crew? As a platoon? Yes and yes. Do they have a basic understanding of maneuver tactics based on past active duty experience and continuous SIMNET training? Yes. Would more maneuver time on real tanks be helpful? Of course.

Active Duty Support

Delta Company conducts most of its training at Fort Drum, Fort Knox, or Fort Dix. Because we are only a few hours by bus from Fort Drum and Fort Dix, we can go to both places often. Being a couple miles away from Stewart Air National Guard Base in Newburgh, we fly down to Fort Knox during two or three regular drill weekends each year to use the SIMNET and COFT facilities there. The full-time staff at all of these installations — whether they be active duty, active guard/reserve (AGR), or federal technicians — are always professional, and they enthusiastically assist us in accomplishing our training objectives. Without them, and without the full-time skeleton crew organic to our company and HHC, we could not accomplish our missions.

The full-timers at home station do the basic maintenance, logistics, and administrative duties necessary to keep our company going. Weekly training meetings with all key part-time personnel are also essential. The telephone and e-mail are the two big tools National Guard leaders rely on to keep a handle on things during the time between drills.

Support from active duty personnel also comes from the folks in the schoolhouse and in the virtual schoolhouse. On-site courses at Camp Smith, Fort Dix, and Fort Knox keep Delta Company tankers abreast of current doctrine. And with the Army's distance learning program, NCOs can complete Phase I of BNCOC and ANCOC (to name two), while officers can complete BMOC in total, Phase I of the Advanced Course (now, the Armor Captains Career Course), and certain phases of subsequent, more advanced, military education. Distance learning is a wonderful thing and the men and women who put it together and maintain the various programs should know that their efforts are appreciated by citizen soldiers in every state.

Use of Army National Guard Tankers in Real-World Missions

Army National Guard tankers train to standard on individual, crew-level, and platoon-level tasks. A National Guard tank platoon can hold its own against any platoon on active duty. Companies, because they are normally spread apart from each other across the state, enjoy great camaraderie and *esprit d'corps*. Prior active duty experience, continued military education, and over 100 days of training together each year make these companies a valuable addition to any larger team. With minimal preparation — 30 to 60 days of continuous field exercises — Delta Company would be fully deployable for combat. In terms of battalion-level deployments, I am too junior to make that assessment. Personally, I would feel better being deployed with my entire battalion for no other reason than it would be comforting to know a lieutenant colonel from the 1-101 Cav would have a say in how and where Delta Company fought as part of a brigade combat team.

This ain't your father's National Guard. It is a professional, well-functioning, warfighting organization. For those on active duty who might be assigned to work with a citizen-soldier tank unit, rest assured that you and they will profit greatly from the experience.

1LT Jim Sosnicky is the XO of D/1-101 Cav, NYARNG. He is a 1993 graduate of the United States Military Academy.

item on your primary hand receipt printout from PBO. Write down the TM/SC number and the **date of publication**, too. It's very important for you to have a master listing that shows this information. Write a memorandum for the PBO to document all the TMs and SCs that you used to conduct your inventories. This way, when it comes time for your change-of-command inventory, you have a reference to prove what you used to conduct your inventory. **The new commander may show up with a more recent publication**. It may list different components than the one that you used, which could make it appear as though you are missing something.

Commander's Hint: Keeping a master list of your property is one of the most important things you will do while in command. I strongly recommend that you keep this data in a spreadsheet. The benefits that you will reap from keeping this type of spreadsheet up-to-date are worth the 15 to 30 minutes that you will have to put into maintaining it each week.

2. Whenever you are missing a TM or SC, send someone to try to find a copy. If they find it, have them make a copy of the cover and the pages that show the COEI, BII, and AAL. Your local Military Occupational Specialty (MOS) library and Logistics Assistance Office (LAO) are two good places to look for TMs and SCs. If they can't find it, inventory as best as you can and **be sure to document that you did not have the proper references to inventory with.** Keep a list of all the TMs and SCs that were missing and task your Publications NCO to get them ordered.

Commander's Hint: The supply room should already have a TM and SC library for your company. I've found that all too often Supply Rooms are missing at least some of what you need. I recommend that you keep a TM/SC extract library in your office, as well as in the Supply Room. Get an old "copy paper box" and file the COEI, BII, and AAL extracts in LIN order. Some will say that this is "micro-management," but this way you will always have what you need. It's especially nice on weekends and after duty hours when the supply sergeant isn't around to let you in the supply room.

3. Check all serial numbers. Have the supply sergeant prepare and submit AARs for any minor deficiencies. If you have any items where the serial numbers are completely different, the PBO may require the outgoing commander to initiate a Report of Survey to correct the problem. Make sure that you document EVERY item that has a serial number on the sub-hand receipt, even if the serial number is not listed on the primary hand receipt from the PBO. This can help you out in identifying your equipment if it is lost or stolen down the road.

Commander's Hint: Trailer-mounted power generation equipment can be difficult to inventory when it comes to serial numbers. Normally, each trailer-mounted generator will have a serial number for the generator itself, one for the trailer, and a third one for the entire "power unit." If the generator has been equipped with an Acoustic Suppression Kit (ASK), then you may have a fourth one on it, too. The serial number that you are supposed to use to account for it on the property book is the one for the entire "power unit." It is normally located on the front right side of the tongue of the trailer. Some of my generators were missing the "power unit" data plate and I had problems trying to figure out what was what. I built a spreadsheet to help me keep it all straight. After the inventory, I added the power in kilowatts and frequency for each generator into my spreadsheet and ended up using it as a reference several times per month throughout my command.

Commander's Hint: Wheeled vehicle-mounted radio installation kits can be a headache to inventory. These installation kits are normally **not** part of the actual radio sets that mount in them. They are non-expendable and appear as a separate LIN on your PBO primary hand receipt. Often, these installation kits are composed of nothing but a bunch of expendable/durable items, which can be requisitioned if short. Contact your local Communications & Electronic Command (CECOM) Logistics Assistance Representative if you have difficulty obtaining a component listing to identify the components.

4. When you inventory your arms room, be sure to inventory any Personally Owned Weapons (POWs) that are stored there. You are required to inventory these as part of your monthly sensitive items inventories, too.

5. As you inventory, check torque wrenches and electronics test equipment for calibration stickers. Are they up to date? If you don't see any, ask your NCOs to find out if the items should be enrolled in your calibration program. Similarly, check your motor pool's "jackstands" and wrecker for "load tests." Ask when the last time your weapons were submitted for their annual "gauging" and when your night vision devices last had semi-annual Low Level Resolution Tests (LLRT). Finally, ask your NBC NCO when your M-8 alarms and Chemical Agent Monitors (CAMs) last had their annual "wipe-tests."

6. Stay organized throughout the inventory process. Keep a folder for each sub-hand receipt. I used "pocket-folders" and kept the master sub-hand receipts on one side and the related component hand receipts on the other.

Commander's Hint: Keeping track of all the change documents on your sub-hand receipts is no easy task. You really need a system of checks and balances to help your supply sergeant and to ensure that you account for everything. Depending upon the size and activity of your company, you may have only a few or large numbers of changes in non-expendable property on a month-to-month basis. I averaged 15 to 25 changes each month. I recommend that either you or your supply officer maintain second copies of all sub-hand receipt. Have the supply sergeant give you a copy of EVERY non-expendable change document on a weekly basis. Put them in your sub-hand receipt folders and update your property spreadsheet on a weekly basis. This way, you have two complete, up-to-date copies of all the sub-hand receipts. This can be a life saver for you.

After the Inventory

When you have finished accounting for all your property, sub-hand receipted everything down to the supervisors and users, verified serial numbers, written memorandums for all deficiencies, reconciled your non-expendable shortage annexes, and finished all the other things that I've mentioned above, you should be ready to sign your primary hand receipt from the PBO. After the change-of-command, don't forget to follow-up and ensure that shortage TMs/SCs and all component shortages are placed on order. Electronic copies of some of the memorandums I've mentioned in this article are available on the *ARMOR* website at: *www.knox.army.mil/armormag/ja00indx.htm*. Good luck!

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Editor's Note: This essay won the second prize in the Draper Essay Contest, sponsored by the Draper Armor Leadership Award Fund to mark the 75th anniversary of the program. Contestants were asked to write on the subject: "Leadership in the XXI Century — Digital Age."

Riding To the Sound of the Guns: Leadership in the XXI Century — Digital Age

by Major Scott L. Efflandt

In today's era of vast change it is often difficult to identify the path to victory.[1] Clearly, our force's success to date has been built on the cornerstone of effective and inspirational leadership.[2] The words of past mounted warriors — such as Stuart, Patton, and Abrams — and contemporary warriors — such as Ulmer, Bahnsen, Thurman, Franks, Tate, and Funk — continue to resonate with timeless wisdom.[3] Yet because their words are timeless, this sage advice cannot directly address the forthcoming challenges peculiar to leaders in the digital age. This paper builds on our heritage to provide direction to Armored/Cavalry leaders in the digital age. In short, I argue that the future success of mounted warriors will stem from our ability as leaders to look beyond how we have been successful and instead focus on why we have been successful. Although counterintuitive to the traditional AAR[4] method, such an approach is imperative for our branch to outpace the current rate of change and continue its essential service to the Army.

Our branch, metaphorically speaking, is a horse at full gallop; now, we, as leaders, must grab the reins and take charge of its direction. Towards this end, I begin by identifying the salient changes of the digital age as they apply to our force. These changes fall into two areas: a) Leadership challenges relating to the mission and, b) Leadership challenges relating to soldiers. I close recommending that Armor/Cavalry leaders respond to these challenges with actions that are both congruent with our dogma and foster that Armor/Cavalry state of mind.

The Digital Age

The economic and technological triumphs of the past few years have not solved as many problems as we thought they would, and, in fact, have brought us new problems we did not foresee. — Henry Ford II [5]

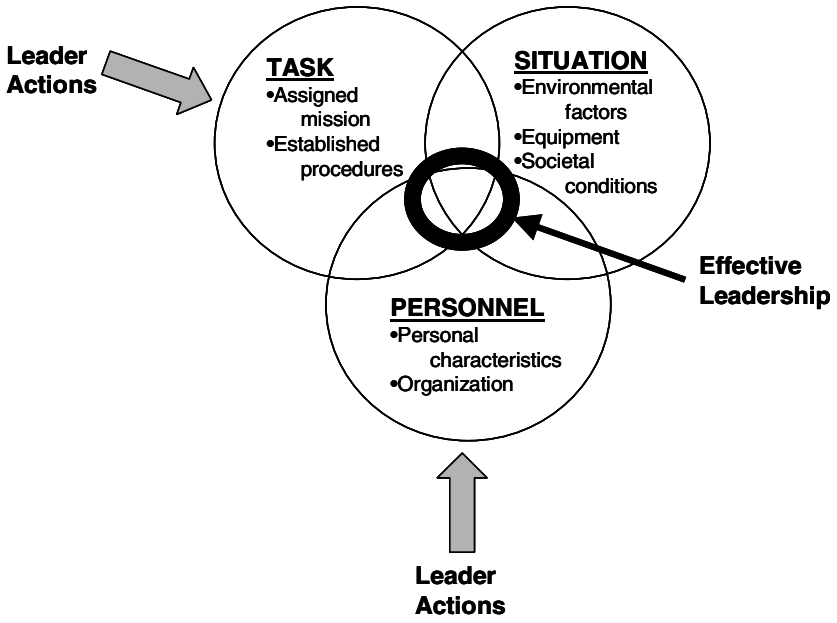
The rapid rate of change in so many areas clearly indicates the beginning of a new era — the digital age. During times of large and rapid change, the truly effective leaders are those who identify the most significant changes and then enable their organizations to act upon them. Changes in the digital age relevant to the Armor/Cavalry community fall into one of two categories. The first category — changes in military affairs — includes changes that effect what missions we perform and how we do them. The second category — changes in personnel affairs — encompasses those factors related to the soldiers we lead and how we lead them.

Changes in Military Affairs

A revolution in military affairs (RMA), by definition, occurs when a military force fundamentally changes the way it operates, within a brief span of time, in order to gain an unprecedented and enduring advantage.[6] A RMA does not develop automatically from technological advances as part of a teleological process, but from the ability of military forces to integrate new technology, change their methods and/or organization, and concepts of war.[7] In contrast, evolutions in military affairs (EMA) develop from incremental change and provide continuity to previous generations. Evolving organizations, while they enjoy the increased predictability that comes from incremental change, become increasingly vulnerable to organizations that experience a RMA. In effect, a RMA victory results from the leadership's ability to avoid relegating change to an EMA.

Technological advances and social change in an environment are necessary but insufficient for a RMA; it takes leadership to complete the process. While many see recent technology advances enabling a RMA,[8] significant changes in three other areas also enable a RMA. First, the nature of war is shifting. The combatants are often irregular forces seeking their own sovereignty with cross-national allegiance.[9] Second, the methods of warfare are changing. Peacekeeping and peace enforcement duties, as well as humanitarian operations, have increasingly occupied the Army — a trend likely to continue into the future.[10] Finally, how and who we fight has undergone massive change. Increasingly, the Army deploys

Figure 1: Leadership Process



as part of a joint or multinational force where several separate entities judge our performance against varying criteria.[11]

Changes in Personnel Affairs

In spite of the above changes in military affairs, soldiers will remain the fulcrum element of our force — yet they, too, have undergone change. While the media labels each generation of recruits as distinct — with terms such as Generation X — Armor/Cavalry leaders need to enter the digital age recognizing larger personnel changes. American society has undergone a "skill revolution." As a consequence, people today are characterized by: a) an increased learning capacity, b) the ability to analyze causal sequences and see their position in world events, and c) the ability to recognize and articulate their values.[12] At the organizational level, our personnel are more demographically varied, dispersed, and interconnected throughout the active and reserve components than ever before.[13]

Leading in the Digital Age

Clearly, before undertaking any change to meet the digital age, an assessment is in order. For over 150 years, the mounted arm has been the decisive component of Army operations. As Armor/Cavalry leaders we must ask ourselves, how can we further this tradition and avoid resting on our laurels? Certainly we do not want to end up like the Samurai of ancient Japan who maintained internal order at the expense of adequate preparation against exterior threats. Clearly, the magnitude of change associated with the digital age necessitates Armor/Cavalry leaders effectively transforming the force.

Our task, as Armor/Cavalry leaders, is to ensure our force contributes to the Army's mission in the digital age. "Leadership is influencing people — by providing purpose, direction, and motivation — while operating to accomplish the mission and improving the organization."[14] Because "leadership is contextual,"[15] the greater our understanding of the situation, the greater our potential to reconcile it with the task and personnel (see Figure 1).[16] However, recognizing the potential of a situation is necessary, but not sufficient for success. Organizations triumph when the method and direction leaders provide exploits change. To identify the best method and direction for Armor/Cavalry organizations, respective leaders should ground their actions against two tenets. First, leader actions in response to military affairs should reflect our dogma. Second, leaders must continue to develop in our personnel that Armor/Cavalry state of mind.

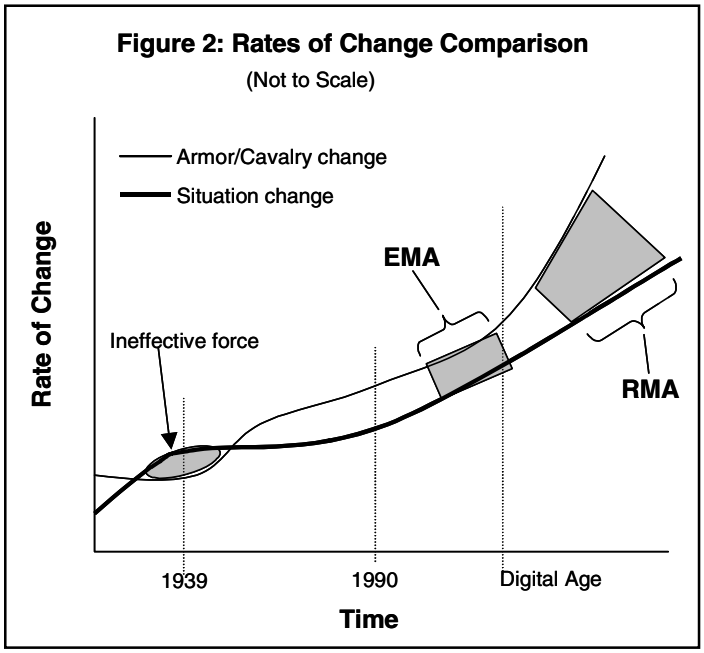
Leadership and Military Affairs

In the final analysis, you should never forget that the airplanes don't fly, the tanks don't run …unless the sons and daughters of America make them do it. A lot of people have been talking about the great technology, but they've been talking about that since the day I graduated [sic from USMA in 1956]. — Norman Schwarzkopf[17]

Changes in military affairs do not by themselves guarantee sufficient organizational change to produce a RMA — consider the Polish cavalry in 1939.[18] The rate of change in military affairs and military organizations are non-linear and independent of one another (see Figure 2). Notably, the Army as a whole is attempting to effect a RMA through information dominance,[19] new doctrine,[20] and

Figure 2: Rates of Change Comparison

(Not to Scale)



in many other areas — ranging from force structure to training methods.

While the Army as a whole seeks a RMA, this does not guarantee that all of its sub-components will experience a RMA or develop proportionally. Thus, the ranks of Armor branch must initiate their own RMA. We must avoid the temptation to respond to the new conditions of military affairs with incremental improvements and thus perpetuate an EMA. Because "organizational energy is finite,"[21] Armor/Cavalry leaders must decide how and where to expend limited resources, in response to the digital age, to produce a RMA in their organizations. We cannot allow changes in technology to mask the larger changes in military affairs, and in turn limit or dilute our organizational response. By adhering to our dogma — a code of unfailing canons — Armor/Cavalry leaders can identify the important changes to act upon.

The function a military organization performs on the battlefield — as opposed to its methods — defines its dogma. The respective dogmas of Armor and Cavalry are: a) Decisive action through the components of shock, firepower, and maneuver or; b) Reconnaissance, security, economy of force. The value of these roles remains timeless, as evident by their execution on foot, horseback, helicopter, and motor vehicles. Future Army missions will continue to require that these two roles be filled. Armor/Cavalry leaders must develop units that continue to fill this role in the digital age. To perpetuate the tradition, Armor/Cavalry leaders must use our dogma as a guide to address the impact of all changes in military affairs in order to effect a true RMA within our branch.

Leadership and Personnel

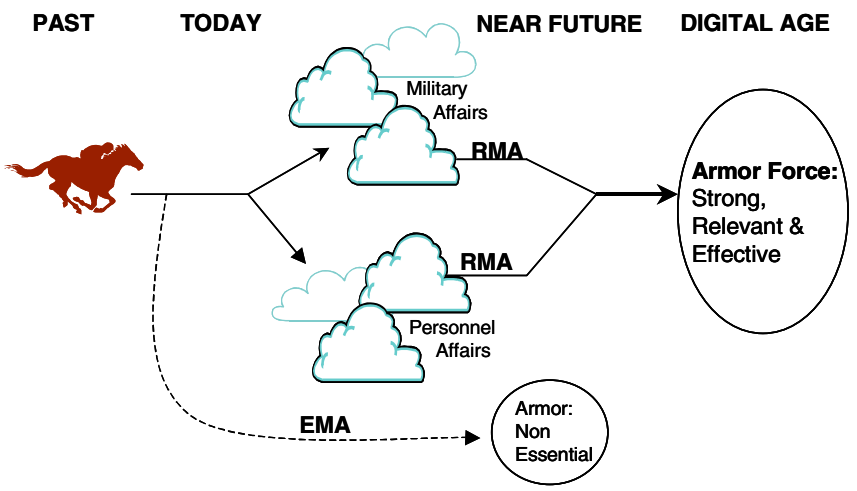
Armor isn't a branch, it's a state of mind. Successful Armor leaders, cavalrymen, and fighter pilots share similar skills and mindsets. Systems are secondary to their state of mind. — John Kirk[22]

Exceptional soldiers, troopers, and crewmen have long been, and must continue as, the trademark of Armor branch. This single element, more than any other, has enabled victory. The Armor/Cavalry soldier's state of mind — marked by initiative, daring, and intellect — spans our near 200-year history as a hallmark characteristic. Leadership in the digital age means developing this spirit and intellect in our soldiers at every level, in every component. We cannot afford to define our relationship with subordinates by MOS, TO&E, or some other quantitative paradigm.[23] More than anything else, ours is a branch about people!

Good situational awareness of the changes in personnel affairs enables leaders to capitalize on the opportunities afforded. Since the attributes and values of today's soldiers diverge from those of previous generations, traditional methods of developing soldiers become rendered obsolete in the digital age. Fortunately, our Army has a history of responding to such change. In WWII, American GIs, as citizen soldiers, lacked the disposition necessary to attain the much-acclaimed Prussian model of conformity and obedience.[24] Yet this "failing" was the very reason for our branch's success in the hedgerows of Europe despite significant doctrinal and equipment shortcomings.[25] Previous generations of Armor/Cavalry leaders capitalized on what the citizen brought to the force by empowering soldiers with the requisite state of mind, rather than attempting to shape all into an "ideal" soldier.[26]

In the digital age, our subordinates will operate in a variety of roles, but all of these will require the personal fortitude that embodies the state of mind that signifies mounted warriors.[27] Rather than see subordinate development in terms of skills required for a duty position we must: a) structure their development to take advantage of the "skill revolution" and, b) measure our success at developing them by their internalization of the branch's ethos. Ultimately our force is a brotherhood — a social network — that extends across active/reserve components and beyond unit boundaries. Thus leaders must recognize all components as one force and personally communicate to them the mission/intent, while taking the extra time to help them grab the horse's reins. Personal interaction — as we nurture, coach and mentor subordinates — allows us to capitalize on the strengths of today's soldier and build trust. Confidence follows from trust and enables the necessary state of mind upon which our future success rests.

Figure 3: Capitalizing on Changing Conditions



Conclusion

Brethren, Armor and Cavalry is not defined by the equipment we use, but by what we do for the Army. As leaders, we have a responsibility to continue serving our soldiers and Army through initiative and change. It is beneath us to stand by and wait for the conditions that suit us, instead we must position ourselves so that we are always riding to the sound of the guns — in whatever form that may take (see Figure 3). Our dogma remains relevant and should guide us to, and through, the digital age. Shock, firepower, maneuver; reconnaissance, security, economy of force — we have a long history of executing this dogma better than anyone else. As a result, we owe it to the Army to continue the tradition. This is our worthy responsibility as leaders. We fulfill this responsibility by both developing effective teams from high quality soldiers — who have an Armor/Cavalry state of mind — and capitalizing on the changes in military affairs to lead a RMA.

Notes

[1]This paper prepared for the 75th anniversary of the Draper Leadership program. The contents enclosed are solely the position of the author and do not explicitly or implicitly represent Armor branch, the U.S. Army, or the Department of

Defense. Permission to cite or reproduce beyond the activities of the Draper program is available from the author. Address questions and comments to the author, whose name and address can be obtained from Director of the Office of the Chief of Armor, ATTN: ATZK-AR, Draper Custodian, 1109 Sixth Ave. Fort Knox, KY 40121-5000.

[2]The author wishes to thank majors Clark Backus and Jon Negin for their comments on earlier drafts.

[3]Davis, Burke, *Jeb Stuart: The Last Cavalier* (New York, N.Y.: Wings Books, [1957] 1994); Porter, Williamson, *Patton's Principles* (Tucson, Ariz.: MCS Inc., 1979); Patton, George, Jr., *War as I Knew It* (New York, N.Y.: Bantam Books, [1947] 1975); Sorley, Lewis, *Thunderbolt: Creighton Abrams and the Army of His Times* (New York, N.Y.: Simon and Schuster, 1992); Clancy, Tom, *Into the Storm* (New York, N.Y.: Berkley Books, 1997); Reference to the leadership principles of the other officers cited has come from public addresses and personal conversations with each from 1987-1998.

[4]After Action Review.

[5]Ford, Henry II, In *Webster's 21st Century Book of Quotations* (Nashville, Tenn.: Thomas Nelson, Inc., 1992), p. 275.

[6]For historical examples, see discussions of "gunpowder revolution," Porter, Bruce, *War and the Rise of the State: The Military Foundations of Modern Politics* (New York, N.Y.: The Free Press, 1994), pp. 64-68; or the "pikemen phalanx," Downing, Brian, *The Military Revolution and Political Change* (Princeton, N.J.: Princeton University Press, 1992), p. 61.

[7]Kagan, Frederick, 1995, cited by Douglas Macgregor, *Breaking the Phalanx* (Westport, Conn.: Praeger, 1997), pp. 31-32.

[8]The periodicals and journals of our profession cite multiple instances of technological improvements that could lead to a RMA; information acquisition and transfer, target detection, munitions lethality and precision, and automation to name just a few.

[9]Holsti, Kalevi, *The State, War, and the State of War* (Cambridge, Mass.: Cambridge University Press, 1996).

[10]Segal, David and Robert Waldman, "Multinational Peacekeeping Operations: Background and Effectiveness," pp. 183-200 in *The Adaptive Military: Armed Forces in a Turbulent World*, by J. Burk, editor (New Brunswick, New Jersey: Transaction Publishers, 1998).

[11]Burk, James, "Thinking Through the End of the Cold War," pp. 25-48 in *The Adaptive Military: Armed Forces in a Turbulent World*, by J. Burk, editor (New Brunswick, N.J.: Transaction Publishers, 1998).

[12]Rosenau, James, "Armed Forces and Armed Forces in a Turbulent World," pp. 49-86 in *The Adaptive Military: Armed Forces in a Turbulent World*, by J. Burk, editor, (New Brunswick, N.J.: Transaction Publishers, 1998).

[13]Moskos, Charles and John Butler, *All That We Can Be: Black Leadership and Racial Integration the Army Way* (N.Y.: Harper Collins, 1996); Moskos, Charles and James Burk, "The Postmodern Military," pp. 163-182 in *The Adaptive Military: Armed Forces in a Turbulent World*, by J. Burk, editor, (New Brunswick, N.J.: Transaction Publishers, 1998).

[14]Army, U.S., *Field Manual 22-100: Army Leadership,* 1996, accessed at: *http://www.fm22-100.army.mil.* 19 Aug.

[15]LeBoeuf, Joeseph, 1998, Program Director, Department of Behavioral Sciences and Leadership, U.S. Military Academy.

[16]This conception differs from other models of leadership that do not explicitly recognize the changing effects of: a) the environment, see Hughes, Robert, Robert Ginnett and Gordon Curphy, *Leadership: Enhancing the Lessons of Experience* (Boston, Mass.: Irwin/McGraw Hill, 1999), p. 60; or b) the institutional inertia that can dictate how a task is performed, see DuBrien, Andrew, *Leadership* (New York, N.Y.: Houghton Mifflin Co., 1998), pp. 18-20.

[17]Schwarzkopf, Norman, Address to the Corps. U.S. Military Academy, 15 May 1991, West Point, N.Y., Eisenhower Hall.

[18]A conceptual diagram, not an analytical historical comparison.

[19]Reimer, Dennis, 1997, *CSA 97-01, Random Thoughts While Running*, dtd 22 JAN 97, distributed via e-mail.

[20]Kirk, John, "Controlling Armor's Destiny," *ARMOR Magazine,* March-April 1999, pp. 8-15.

[21]Cone, Bob, 1995, Commander 1/3 ACR, Fort Bliss, Texas.

[22]Kirk, pp. 8-15.

[23]Military Occupational Specialty, Table of Organization and Equipment.

[24]Ambrose, Stephen, *Citizen Soldiers* (New York, N.Y.: Simon & Schuster, 1997). See also Cohen, Elliot. *Citizens and Soldiers* (Ithica, NY: Cornell University Press, 1985).

[25]Folkstad, William, *The View from the Turret,* (Shippensburd, Pa.: Burd Street Press, 1996).

[26]Lindekk, Tore, 1992, "The Weberian Ideal-Type: Development and Continuities,"*Acta Sociologica*, 35:285-297.

[27]Ryan, Mike, 1999, explains how determination in the faces of 19K soldiers operating as peacekeepers in Kosovo was critical to mission success.

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Depleted Uranium

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- Wear respiratory protection (mask), cover exposed skin, and wear gloves, if you must handle or work around DU dust or residue.

Maintenance personnel assigned to battle-damage assessment and repair teams receive an additional block of instruction. Tier II — Battle-Damage Assessment and Repair provides soldiers who routinely work inside the crew compartment of armored vehicles with the knowledge they need to take appropriate protective measures when required. The Ordnance Center and School is developing a "DU Kit" that contains a disposable HEPA filter mask for nose and mouth, disposable gloves, wet wipes for decontaminating interior surfaces, and plastics bags to collect and dispose of these items after use.

Chemical soldiers receive training beyond the general awareness level. Tier III — NBC Advisor, provides the most detailed technical information of the three tiers. Every effort has been made to ensure chemical NCOs and officers know how to properly advise their unit commanders and staffs on the impact of DU on unit operations.

Depleted uranium is the best ammunition to defeat enemy armor, the best armor to protect U.S. soldiers, and does not present a health hazard when appropriate protective measures are taken. The information provided above sheds some light on the subject of depleted uranium. The controversy surrounding the use of DU probably will not disappear any time in the near future and research will continue. Based on current information, DU does not pose a militarily significant threat to soldiers who take basic measures to avoid unnecessary contact and exposure.

At the time this article was written, Mike Sheheane was serving as the Chief, Chemical Warrior Division, Warrior Department, DOTD, MANSCEN. He is a career civil servant and a retired U.S. Army Reserve officer. Sheheane is a graduate of the Army Command and General Staff College, and the Senior Training Manager's Course. He holds a master's degree in both Education and Criminal Justice.

Wounded Knee — What Really Happened

"Clearly, Wounded Knee Was No My Lai or Malmedy..."

by Major Mark A. Farrar

Late afternoon, December 29, 1890, Pine Ridge Reservation, Dakota Territory. On a blanket of frozen snow, at an insignificant valley named for the nearby creek of "Wounded Knee," 261 people lay dead or dying within a 400-meter perimeter. The casualties include men, women, and children from two Sioux tribes, soldiers of the U.S. 7th Cavalry, two newspaper reporters, an Army translator, and a Catholic priest.

These human casualties of Wounded Knee have never been in question, but the motives, conduct of the participants, and responsibility for the incident have been left to us with a greatly revised, factually inaccurate, and extremely one-sided version.

According to these revisionist accounts, a drunken and disorderly 7th Cavalry rounded up helpless Native Americans and ruthlessly gunned them down to avenge Little Big Horn. Automatic weapons assisted the process of coldly murdering unarmed women and children, and the casualties inflicted on 7th Cavalry were a result of fratricide. Although this version sells well in politically correct circles, the facts of the event (which are supported by both Sioux and 7th Cavalry sources, the results of an Army inquiry, an 1894 independent inquiry by the Bureau of Indian Ethnology, a Presidential investigation, and my own research) speak otherwise.

Wounded Knee Background

The events leading to Wounded Knee can be traced to one Indian named Wovoka.[1] He claimed to have died, gone to heaven, and witnessed a millennial vision of an exclusive Indian world to come. The "new" world would be one devoid of the white man. Buffalo would roam the plains once more. Dead relatives would be reunited with their living families. The millennium would result by singing and dancing. Wovoka's vision became known as the "Ghost Dance." Most Western tribes practiced this unusual mixture of Christian and Native American spiritualism in a non-violent manner. However, the Dakota Territory reservations took a different interpretation. Two Indians (Short Bull and Kicking Bear) viewed the dance as a medium to bring the Sioux nation to arms. They thought the millennium would occur faster if the white man were removed.[2]

Still fresh in the public's mind, was the Minnesota Sioux Uprising. In 1862, the Santee Sioux had risen up against the town of New Ulm, killing over 400 settlers.[3] The main cause for that tragedy resulted from a lack of food. Through government ineptitude, a similar situation was in progress in the Dakota Territory.[4]

By October 1890, the Ghost Dance concentrated on two reservations: Standing Rock (home to none other than Sitting Bull) and Pine Ridge (on the Dakota/Nebraska border). The new agent of the Pine Ridge reservation, D. F. Royer, found himself facing a serious movement. On October 12, he frantically reported that no less than half of the 6,000 Pine Ridge Indians were ghost dancing and were beyond control

of tribal Indian police. He urgently requested the Army to quell the dancing.[5]

The Department of Missouri commander, Gen. Nelson Miles, disagreed with Royer's assessment. Ten years earlier, Miles had been commander of the operation that brought Sitting Bull's tribe to the reservation.[6] In the opinion of Miles, the Army's most experienced Indian campaigner, the dance movement would fade away, and so Miles vehemently opposed the use of force. Royer was not satisfied and went behind Miles' back to request troops.[7] The Miles/Royer disagreement would be the first of two disastrous civilian interferences.

As the crisis entered its third week, it appeared that a show of force might possibly bring the uprising to a close. To hasten the ending, agents and the military produced lists of key leaders who were rounded up by Indian police.[8] One of the key leaders was Sitting Bull. It had been on his personal invitation that the Ghost Dance was brought to Standing Rock. Despite the reservation agent's (James McLaughlin's) objections, Sitting Bull continued to sponsor the Ghost Dance.[9]

Miles was very familiar with Sitting Bull and wanted to bring him in quietly. He enlisted the aid of Sitting Bull's friend, William Cody (Buffalo Bill), to encourage Sitting Bull to surrender. In violation of Miles' plans, Agent McLaughlin diverted Cody and sent his own Indian police to arrest Sitting Bull.[10] Just as Royer's interference exacerbated an already tense situation, MacLaughlin's actions proved even more disastrous. As the Indian police arrested Sitting Bull, a gunfight erupted. Within minutes, six Indian police were dead, including Sitting Bull and eight of his followers.[11] Ironically, Sitting Bull was shot dead by one of his own people from the tribal police.

Perhaps sensing imminent government intervention, Short Bull urged the Ghost Dancers to gather at a sacred place in the Dakota Badlands known as the "Stronghold." There they were to wait for the coming of an Indian messiah. He exhorted his followers to dance, even if they were surrounded by Army troops.[12] He also encouraged the dancers to don "ghost shirts" that were believed to be bulletproof.

When the Ghost Dancers moved towards the Stronghold, the President ordered the Secretary of War to assume military control of Standing Rock and Pine Ridge reservations. On November 17, 3,000 U.S. troops deployed onto the Dakota reservations with the mission of ending the Ghost Dance.[13] Based upon the botched incidents leading to military intervention, a key tenet of the operation was transfer of authority from the Indian agency to the Army. On December 1, the Secretary of the Interior issued the following: "Agents are instructed to obey and cooperate with the military officers in *all* matters looking to the suppression of the outbreak."[14]

Upon Sitting Bull's death, many of his followers voluntarily turned themselves in. However, many bands were still roaming the badlands and were believed armed. One band of particular concern were refugees from Sitting Bull's followers, under the leadership of a chief named Big Foot. In the midst of this already volatile situation, more trouble erupted. On Christmas Day, a band of Sioux (under Kicking Bear's leadership) attacked a unit of Cheyenne U.S. scouts.[15] The question of whether the uprising would evolve into an armed revolt was now beyond discussion. At this point, all of the operational commander's advice, guidance, and orders had been ignored or violated. Miles must have been furious, but the worst was yet to come.

Three days later, Kicking Bear's group surrendered. The last element unaccounted for was Big Foot's band. Big Foot's refugees had eluded capture the week previous and were still considered a threat. Miles issued the following instructions: Big Foot's band were to be apprehended, disarmed, and if not returned immediately to Standing Rock, then to another reservation until the Ghost Dance was under control.[16]

It was with these orders that Major Samuel Whitside and 1st Squadron/7th Cavalry apprehended Big Foot on December 28th. Whitside requested and was granted immediate and unconditional surrender.[17] Whitside directed Big Foot's band to encamp at a nearby bend of Wounded Knee Creek.

Whitside noted that Big Foot was suffering from pneumonia, so he had a Sibley tent (with stove) erected and sent the 7th Cavalry regimental surgeon to look after the ailing chief.[18] Because of diminishing light, Whitside decided to hold off disarmament until morning. He posted two troops to guard the valley and rested the remainder of the squadron and waited for the rest of the regiment.[19]

The Soldiers

In 1890, COL James W. Forsyth commanded 7th Cavalry. He had a distinguished Civil War record, and had even been an *aide de camp* to General Philip Sheridan (this apparently did not put him in favor with Miles).[20] Forsyth was respected in the regiment and exercised a much superior command environment than his most famous predecessor, Custer.[21] Forsyth commanded two squadrons at Wounded Knee. Of these, six troop commanders had been in the regiment with Custer and five of the six had been at Little Big Horn.

Attached to 7th Cavalry were a battery of Hotchkiss guns (a popular Wounded Knee myth is that 7th Cavalry had Gatling (machine) guns and/or heavy artillery. (The Hotchkiss gun was a light, single-shot, one-horse-drawn howitzer that fired a projectile about the size of a Bradley round). Also attached to 7th Cavalry was a troop of Indian scouts, an odd assortment of media (three newspaper reporters), and a non-government agency representative (Father Francis Craft, a missionary at Pine Ridge). Also present were two interpreters, John Shangreau and Phillip Wells. These two men would hear the last words of Big Foot and would later provide the interpretation that ended the fighting.[22]

Big Foot's Band

Big Foot's refugees consisted of a mixture of Hunkpapa and Miniconjou Sioux, totaling 340. Of these, 106 were braves.[23] In terms of force ratios, the Sioux were outnumbered six to one. Based on that reality, it leads one to wonder why they would even consider fighting. It must be remembered that these were tired, cold, hungry, and angry people who had just crossed South Dakota on foot. To complicate matters, they were under the tragic belief that they were wearing bullet-proof shirts. While today we would look in horror at the fact that the Sioux would start a fight in the immediate vicinity of their families, to them it was not a consideration. Fighting for survival on the plains was a business for everyone, whether it was a fight against nature, other Indians, or the white man.

A cruel fact of the Indian Wars was that it was not a conventional war. Quarter was something not expected nor frequently offered. Black Elk, a Sioux Indian who was at both Wounded Knee and Little Big Horn, described a Big Horn scene from his youth that

illustrates the universally understood "No Quarter" concept: "The women swarmed up the hill and began stripping the soldiers… I saw something funny. Two old women were stripping a soldier, who was wounded and playing dead. When they had him naked, they began to cut something that he had, and he jumped up and began fighting with the two fat women. He was swinging one of them around, while the other was trying to stab him with her knife. After a while, another woman rushed up and shoved her knife into him and he died really dead. It was funny to see the naked Wasichu (a Sioux derogatory word for white man) fighting with the fat women."[24]

Despite the harsh realities of Indian warfare and the fact that many of the 7th Cavalry officers and rank and file had been eyewitnesses to the carnage described above 14 years earlier, there is little or no evidence of a revenge motive. In fact, the actions of 7th Cavalry at Wounded Knee paint quite a different picture.

Disarmament and Disaster

Late on the 28th, Forsyth arrived with the remainder of the regiment. His plan for the 29th was as follows: Troops of the second squadron were to remain mounted in troop formation on three sides of the Indian camp. The first squadron was to dismount and be held in reserve close by the fourth side to be used in the event of difficulty during disarmament. The Hotchkiss guns were placed on the hill overlooking the camp. At best, this formation was a show of force or a security cordon.[25]

Spurious versions of Wounded Knee claim that on the night of the 28th, the cavalrymen drank lots of whiskey and were still drunk the next morning. The whiskey story, like the Gatling guns, is another example of revisionist fabrication. No original source, either pro or con 7th Cavalry, mentions whiskey. If there had been drunken revelry, the incident would have been enough to convict Forsyth during the post-Wounded Knee inquiry that acquitted him of all charges.

At reveille on the 29th, rations were distributed to the Indian camp. An hour and a half later, the troops moved into position. Troops A and I remained in the same place occupied the night before. The two troops that would receive the first hostile volley, B and K, formed at the head of the Army camp. Forsyth then sent the interpreters to the Indian camp with instructions for disarmament. Forsyth wanted the Winchester rifles that Whitside had seen the day before.[26] The braves gathered in a rough line in front of Big Foot's tent where Forsyth spoke through the interpreter.[27] The Indian reaction was not what had been expected. The request for weapons was met with extreme reluctance. Two braves were sent to talk with Big Foot, accompanied by interpreter John Shangreau. Even after being given heated accommodations and medical care, Big Foot was distrustful. "Give up the bad guns, and keep the good ones," he told the braves. Shangreau strongly advised the chief to reconsider.[28]

"The women were thought to be concealing weapons so they were searched. The search turned up weapons of all descriptions, not just Winchesters, but knives, axes, hatchets and bows with arrows."

Forsyth instructed 20 Indians to search the camp for weapons. The braves returned with several old and serviceable firearms and set them near Big Foot. Forsyth had Big Foot brought out of the tent with the hopes that he would encourage others to surrender Winchesters. The ailing chief refused to cooperate.[29]

With no options left, Forsyth fell back on the plan he hoped would not be necessary. B and K troops were moved into the Indian camp and positioned to separate the village (where the women and children were seated) from the braves. B and K troops now stood about 30 meters behind the braves. Whitside and Hoff (the surgeon) recalled that Forsyth again tried to coerce the Indians to give up the Winchesters. He was told there were none left.

Receiving no cooperation, Forsyth ordered a search of the village. The women were thought to be concealing weapons so they were searched. The search turned up weapons of all descriptions, not just Winchesters, but knives, axes, hatchets and bows with arrows.[30]

1LT James Mann (K Troop) described the search: "We went through the tents searching for arms, and while this was going on everyone seemed to be good natured, and we had no thought of trouble. The enlisted men were not allowed to go inside the tents and only took the arms as we officers handed them out. The squaws were sitting on bundles concealing guns and other arms…. The squaws made no resistance, and when we took the arms they seemed to be satisfied. Wallace (the troop commander) played with the children, chucking them under the chin and being as pleasant with them all as could be. He had picked up a stone war club, which he carried with him."[31] It should be noted that CPT Wallace was a veteran of Little Big Horn. This scene does not describe a vengeful prelude to imminent wholesale slaughter.

While the search was in progress, trouble was brewing among the braves. John Shangreau recalls, "A medicine man named Yellow Bird began inciting the Indians in front of Big Foot's tent." "Do not be afraid and let your hearts be strong to meet what is before you. We are all well aware that there are lots of soldiers about us and they have lots of bullets, but I received assurance that their bullets cannot go towards you; they will not penetrate you."[32]

The other interpreter (Wells) anxiously reported Yellow Bird's comments to Whitside and Forsyth. The search had only produced 38 Winchesters.[33] There had to be more somewhere. The only place left to search was under the blankets worn by the braves.

We are left with a vivid description of Yellow Bird from Black Elk's recollections: "Some had not given up their guns and so the soldiers were searching all the teepees, throwing things around and poking into everything. There was a man called Yellow Bird, and he and another man were standing in front of Big Foot's teepee where Big Foot was lying sick. They had white sheets around and over them with eyeholes to look through and *they had guns under these*.[34]

At approximately 0930, Forsyth ordered the search of the braves. He would later have to defend this course of action, but the post-Wounded Knee inquiry vindicated his actions. The key figures in this scene are Yellow Bird, and another Indian named Black Coyote. Black Coyote was described by Wounded Knee survivor, Turning Hawk,

as "a crazy man, a young man of very bad influence and in fact a nobody."[35]

It was this "nobody" and Yellow Bird that bear responsibility for the events leading to violence. Several eyewitness descriptions have been left to us and all are worth examining.

According to a Sioux brave named Spotted Horse, Black Coyote started the firing. He recalls, "This man shot an officer in the Army; the first shot killed this officer… As soon as this shot was fired the Indians immediately began drawing their knives, and they were exhorted from all sides to desist, but this was not obeyed."[36]

Black Elk's version has Yellow Bird as the central figure. "An officer came to search them. He took the other man's gun (Black Coyote?) and then started to take Yellow Bird's. But Yellow Bird would not let go. He wrestled with the officer, and while they were wrestling, the gun went off and killed the officer."[37]

The 1894 inquiry verified the event: "As Yellow Bird spoke in the Sioux language, the officers did not realize the dangerous drift of this talk, and the climax came too quickly for them to interfere. It is said one of the searchers now attempted to raise the blanket of a warrior. Suddenly Yellow Bird stooped down and threw a handful of dust into the air, when as if this were the signal, a young Indian said to have been Black Fox (possibly Black Coyote?) from Cheyenne river, drew a rifle from under his blanket and fired at the soldiers."[38]

PVT Clarence Allen was overlooking the valley and witnessed the event from a different angle: "All of the Indians had big blankets wrapped around them… and each Indian had his rifle under his blanket. When they came to understand they were to be searched, the medicine man (Yellow Bird), …. commenced to dance and blow on a little reed whistle…. The interpreter who was with us said to the commanding officer, "There is going to be trouble" and about that time the medicine man stooped over, picked up a handful of dirt and threw it into the air. That was a signal understood by the bucks (braves), who dropped their blankets, clapped the butts of their rifles under their arms, and pumped lead, not taking any sight. Their rifles by the way were repeating rifles that had come from traders and which they were not expected to have, while we were equipped with single shot carbines."[39]

From a brief account by the artist Frederick Remington, we have additional verification: "Lying on his back, with a bullet through the body (1LT Mann would eventually die from his wounds), Lieutenant Mann grew stern when he got to the critical point in his story. I saw three or four bucks drop their blankets, and I saw that they were armed. Be ready to fire, men, there is going to be trouble… Oh yes, Mann, but the trouble began when the old medicine man threw the dust in the air. That is an old signal of defiance and no sooner than he had done that act than those bucks stripped and went into action…"[40]

Common in all of these versions, regardless of source, is that the Indians fired first. The insanity of this first volley should be measured against the fact that, for the Indians to shoot at the soldiers, they had to fire in the direction of their families, who were seated behind B and K Troops!

Black Elk tells us what happened next: "The warriors rushed to where they had piled their guns and knives. They fought soldiers with only their hands until they got their guns. Dog Chief saw Yellow Bird run into a teepee with his gun, and from there he killed soldiers until the teepee caught fire."[41]

PVT Allen described the 7th Cavalry reaction: "The two troops that formed the inner square (B & K), dropped, ran, did anything they could to get away. One was stabbed and was brained with an Indian club."[42]

During this initial fight, several officers were shot or wounded. CPT Wallace had the top of his head blown off, LT Gresham (B Troop) was shot in the face, LT Garlington took a round in the elbow, interpreter Wells lost most of his nose in a hand-to-hand struggle, and the missionary Father Craft was stabbed in the back.[43] The most noted Indian casualty was Big Foot.

The situation in the valley was now complete confusion. Eyewitnesses describe a wild scene of fleeing Indians, soldiers, women and children, dogs, ponies running in all directions and scattered hand-to-hand struggles occurring near and around the council area. No one person was able to watch it all, but piecing together accounts recreates the event.

It is from this point forward that the Army had to defend its actions. The Indians sources state that after the initial fight, everything that followed was a massacre.[44] They stress that the troops pursued unarmed non-combatants and shot them indiscriminately. The evidence left to us indicates otherwise.

The most controversial subject of Wounded Knee was the use of the Hotchkiss guns. The Indian sources state that as soon as the fighting erupted, the Hotchkiss guns immediately opened fire into the valley.[45] This means that Hotchkiss fire would have engaged soldiers and Indians. CPT Capron stated that he did not fire until the troopers had left the valley and even went so far as to remove friction primers out of the barrels until soldiers were clear.[46]

So, if we are to believe this, where were the Indians when they were hit by Hotchkiss fire? This is one of the most complicated issues of Wounded Knee that clouds any objective study. According to Indian and Army accounts, after the initial fight the Indians either ran for the village or to a ravine that bisected the valley.[47] There was no separation of armed braves and what we would traditionally define as non-combatants. Warriors, women, and children all crowded for cover in the same place. Despite the jeopardy in which the braves placed their families, there was no hesitation on their part to continue the fighting.

What also should be kept in mind is that, true to typical Indian modes of warfare, the braves weren't the only ones firing. Black Elk gives us an example: "Their were two little boys at one place in this gulch (the ravine). They had been killing soldiers all by themselves. We could see the soldiers they had killed. The boys were all alone there, and they were not hurt. They were brave boys."[48]

Similar situations occurred elsewhere. E Troop was in a position overlooking the pony herd. 1LT Sickel watched as a large group of Indians on horseback exited from the valley. He ordered his men *not* to shoot at them. He then modified his orders and said to knock down only the ponies, *not* the riders. Just as he had done so, an old woman on horseback began returning fire at E Troop. 2LT Rice, also of E Troop, had to intervene as a trooper was about to shoot at the woman, "There is a buck, shouted one the troopers and aimed his carbine at her. "No, it is a squaw, don't shoot at her." "Well by God, Lieutenant, she is shooting at us."[49]

Other incidents that document restraint include the actions of I Troop.

"The news of Wounded Knee spread like wildfire and all the work that had gone towards bringing peace to Pine Ridge was undone...."

The commander, CPT Nowlan, reported that he allowed a group of women and children to enter the ravine without being shot at. He did not extend the same courtesy to a group of braves that immediately followed the women and children.

Not all Indians ran for the ravine. According to CPT Capron, it is when firing commenced from the teepees (they were firing at the Hotchkiss guns roughly 200 meters away) that he ordered them mown down.[50] It was with this fusillade that Yellow Bird met his fate immediately after shooting a trooper who disobeyed orders and had run up to shoot the medicine man.[51]

As the fight around the perimeter died down, the fighting in the ravine increased. The Hotchkiss guns shifted fire to the ravine. C and D Troops were forced to move for fear of being hit by the exploding shells going off right in front of them.[52] This is the only documented incident of a *potential* of fratricide. From having personally walked the battlefield and observed each troop position, I can certify that *all* the soldiers had to fire down so as to engage the village and the ravine. For the soldiers to risk fratricide would have required a significant lifting and shifting of fire (as the Hotchkiss guns did). Hence this author believes that since the Hotchkiss fire was the only marginally "potential" fratricide event worthy of record, that in all probability there were no others.

According to PVT Allen, fighting in the ravine focused in one area. He recalls: "At the end of the ravine was a deep pocket, probably 25 to 30 feet deep and perhaps 30 to 40 feet in diameter. That, as far as I could see, seemed to be the end of the ravine. The Indians dropped everything they could not take with them easily and beat through the Indian village into the gully and from there they skirmished with troops until we came to this pocket spoken of."[53]

With the majority of Indians in the "pocket," the Hotchkiss guns were now unable to produce effective fire, so one of the gunners, CPL Paul Winert, took it upon himself to move his gun closer. He recalls: "My captain called me back, but I kept shooting. Lieutenant Hawthorne came toward me and was calling, and suddenly I heard him say "Oh, my God!" Looking around, I saw him lying on his side and then I knew he had been hit. Hartzog ran to him and carried him back behind the hill. I said: "By God! I'll make them pay for that" and ran the gun fairly into the opening of the ravine and tried to make every shot count. They kept yelling at me to come back, and I kept yelling for a cool gun, there being three more on the hill *not* in use. Bullets were coming like hail from the Indian Winchesters. The wheels of my gun were bored full of holes and our clothing was marked in several places. Once a cartridge was knocked out of my hand just as I was about to put it in the gun, and it's a wonder the cartridge didn't explode. I kept going farther and pretty soon everything was quiet at the other end of the line. Then the other guns came down."[54]

It was this use of the Hotchkiss gun that in all probability inflicted the most controversial casualities. Corporal Winert's act of insubordination/bravery may seem extreme to some, but it brought the fighting to a close. As the firing diminished, troops were brought down from the hills to clear the ravine. The fighting still centered on the pocket. PVT Allen recalls, "The scrap started in the late forenoon and lasted until about four or five in the afternoon. They surrendered after the interpreter talked with them over the side of the pocket."[55] The interpreter was Phillip Wells. With his nose dangling from his face by a shred of skin, he shouted over the edge of the pocket for the Indians to surrender.

The soldiers brought the wounded of both sides back to the council area and began caring for those in need. Perhaps the best eulogy of the tragic fight came from an Indian named Frog. As he was waiting for treatment Phillip Wells heard him mutter: "He raised himself a little higher and raised his closed fist, pointing it towards the dead Indian, Yellow Bird, shot out his fingers, which is amongst the Indians a deadly insult, meaning I could kill you and not be satisfied doing it, am sorry I could do no more to you… speaking as though to the dead man: "If I could be taken to you I would stab you," then turning to me said, "He is our murderer, only for him inciting our young men we would have all been alive and happy."[56]

The news of Wounded Knee spread like wildfire and all the work that had gone towards bringing peace to Pine Ridge was undone. The very next day, 7th Cavalry was involved in a fight at nearby Drexel Mission and had to be bailed out by the Ninth Cavalry. General Miles, already furious over loss of life at Wounded Knee, relieved Forsyth of command. The post-Wounded Knee inquiry cleared Forsyth and his commanders, but the accusations by Miles against Forsyth are still used by revisionists bent on condemning the Army.

Clearly, Wounded Knee was no My Lai or Malmedy, but the events of Wounded Knee have been so successfully twisted that Wounded Knee is viewed as the ritualistic capstone sacrifice to manifest destiny. As with many other Indian War events, the Army has been unfairly used as the convenient scapegoat.

Concerning Wounded Knee, it should be remembered:

- The Army wanted no part of the Ghost Dance; military action was viewed as unnecessary,
- The Army was brought in only after civilian bureaucracies totally lost control and public safety was imminently threatened,
- The critical mission, and the key to suppressing the Ghost Dance, the arrest of Sitting Bull, was flagrantly undermined and executed clearly against the intent of the operational commander,
- At Wounded Knee, after unconditionally surrendering, being given food/shelter and unusually hospitable medical treatment, it was the Sioux who refused to cooperate un-

der terms they agreed to less than 24 hours before,

- And finally, the Sioux started the fight.

Is it unreasonable for soldiers to return fire when their lives are threatened?

LT Robert G. Carter, (4th Cavalry, circa 1870s) best described the Army's Indian War paradox and made a shockingly accurate prediction of a post-Wounded Knee legacy: "A warfare in which the soldier of the United States had no hope of honors if victorious, no hope of mercy if he fell, slow death by hideous torture if taken alive: sheer abuse from press and pulpit, if, as was inevitable, Indian squaw or child was killed. …Fighting oftentimes against a foe for whom we felt naught but sympathy, yet knew that the response could be but deathless hate…."[57]

Notes

[1] Virgil Vogel, *This Country Was Ours* (New York: Harper Row Publisher, 1972), p. 183. Robert Utley, *The Indian Wars* (American Heritage Publishing Company, 1977), p. 337.

[2]Ibid., Utley, p. 337.

[3]Richard Dillon, *Indian Wars* (Exeter Books, New York, 1984), p. 30.

[4]*New Sources of Indian History* (Norman: University of Oklahoma Press, 1934), p. 85.

[5]*Part II, Fourteenth Annual Report of the Bureau of Ethnology to the Secretary of the Smithsonian Institution, 1892-93* (Washington: Govt. Printing Office, 1896), p. 93.

[6]Dillon, p. 92.

[7]*Part II*, p. 94.

[8]Ibid., p. 98.

[9]*New Sources*, p. 2 and p. 311.

[10]*Part II*, p. 100.

[11]Utley, p. 440.

[12]*Part II*, p. 94.

[13]Ibid., p. 95.

[14]Ibid., p. 95.

[15]Ibid., p. 114.

[16]Robert Utley, *Frontier Regulars* (MacMillan Publishing Co., New York, 1973), p. 146.

[17]Robert Utley, *Last Days of the Sioux Nation* (Vail-Ballou Press Inc., 1963), p. 204.

[18]Dee Brown, *Bury My Heart At Wounded Knee* (Holt, Rinehart, Winston, New York, 1970), p. 441.

[19]Ibid., p. 441.

[20]Utley, *Last Days of the Sioux Nation*, p. 200.

[21]Ibid., p. 200.

[22]Ibid., pp. 203, 204.

[23]*Part II*, p. 114.

[24]John W. Neihardt, *Black Elk Speaks* (Lincoln: University Press of Nebraska Press, 1961), p. 252.

[25]Utley, *Last Days of the Sioux Nation*, p. 204.

[26]Ibid., p. 204.

[27]Ibid., p. 206.

[28]Ibid., p. 206.

[29]Ibid., p. 207.

[30]Ibid., p. 209.

[31]Ibid., p. 209.

[32]Ibid., p. 210.

[33]*Part II*, p. 115.

[34]Neihardt, p. 267.

[35]*Part II*, p. 139.

[36]Ibid., p. 139.

[37]Neihardt, p. 267.

[38]*Part II*, p. 118.

[39]Clarence Allen, PVT, *My Experiences in the Seventh Cavalry*, (Private Collection of Dr. Don G. Rickey, 1954), p. 9.

[40]Frederick Remington, *Frederick Remington's Own West*, (Promontory Press, New York, 1960), p. 252.

[41]Neihardt, p. 267.

[42]Allen, p. 8.

[43]Utley, *Last Days of the Sioux Nation*, p. 214.

[44]*Part II*, p. 119.

[45]Brown, p. 444.

[46]Utley, *Last Days of the Sioux Nation*, p. 215.

[47]Brown, p. 444 and Allen, p. 8.

[48]Neihardt, p. 265.

[49]Utley, *Last Days of the Sioux Nation*, p. 216.

[50]Ibid., p. 217.

[51]Ibid., p. 216.

[52]Ibid., p. 219.

[53]Allen, p. 9.

[54]Utley, *Last Days of the Sioux Nation*, p. 221.

[55]Allen, p. 9.

[56]Utley, *Last Days of the Sioux Nation*, pp. 222-223.

[57]Robert G. Carter, *Memoirs*, (Fort Concho Newsletter, San Angelo, Texas, Jan. 2000), p. 4.

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LETTERS from Page 5

another. Officer management would also be more decentralized, with officers below the rank of lieutenant colonel promoted and managed by the regiments in regards to assignments, promotions, and selections for schools. Active officers and senior noncommissioned officers of the regiment would rotate to serve in the battalions of the regiment that belonged to Army Reserve and National Guard units. This would improve a "one Army" concept.

Despite the details outlined in the TRADOC Faith/Ross study of the merits of a regimental system, and extensive historical evidence to back its credibility, the plan was resisted by the Army staff, particularly personnel managers and lifelong personnel bureaucrats. Several general officers were also against the plan despite extensive proof of the failure of the individual personnel system in three wars... Personnel managers did not want to relinquish control; they wanted to micro-manage soldiers. Rigid patterns had been established for officers to succeed in the "system."

A regimental system, the MILPERCEN bureaucrats stated, would not make the system equal for all individuals, because of the focus on unit excellence. Personnel bureaucrats also argued that the entire personnel accounting system would have to be reformed to support a regimental system.

General Starry was simply "stonewalled" by most of the general officer corps and the personnel bureaucrats. The DoD personnel accounting system was a complex derivative of the Planning, Programming and Budgeting System (PPBS), an accounting system brought into the Defense Department by Secretary of Defense Robert McNamara in 1963 to manage the Defense budget. The Army staff continued to look for a compromise in 1979-1980, and that compromise would become the COHORT program, which was left to die slowly and had disappeared by the time the Gulf War broke out ten years later.

MAJ DONALD E. VANDERGRIFF
Woodbridge, Va.

Letter Added to Abrams History, Authors of Book Respond

Dear Sir:

Regarding Mr. George P. Psihas's letter to the editor (May-June 2000) concerning omissions in Major General Robert J. Sunell's Chapter 13 of the book *Camp Colt to Desert Storm*, the editors of the book, Dr. George F. Hofmann and General Donn A. Starry, consider the information provided by the former President of GDLS a valuable addition to the history of the Abrams Tank System. In fact, we believe that there is a story to be told about other major vendors: Hughes for rangefinder and thermal sight,

Avco Lycoming for the AGT1500 engine, Computer Devices of Canada, Allison for the transmission, and other vendors from 41 states who supplied the key components that, when assembled, comprised this magnificent tank.

However, Chapter 13 in this book is about the Abrams tank and not about General Dynamics. General Sunell clearly stated in the third paragraph of his chapter (page 432) that he "...could not cover all of the details of the Abrams Tank System in a single chapter. To cover it from concept formulation through production would require, at a minimum, an entire book." More so, General Sunell followed the guidelines provided by the editors to all the contributing authors to keep the book focused and as readable as possible.

We thank Mr. Psihas for the additional historical information he has provided to readers of *ARMOR* about the efforts of both Chrysler and General Dynamics in making this tank a reality. We also recommend that he team with other major vendors of this system and complete its history, describing in detail the difficult time the various vendors had in perfecting their portions of the Abrams tank.

DR. GEORGE F. HOFMANN
University of Cincinnati

GENERAL DONN A. STARRY (RET.)
Fairfax Station, Va.

MOUT Training Sites May Not Be "Urban" Enough

Dear Sir:

I read "Armor's Role in Future U.S. MOUT Doctrine," May-June 2000, with great interest. I would like to share some thoughts with you based upon my training and experience in MOUT.

- It's important to note that "urbanized terrain" includes both urban terrain and suburban terrain. Urban terrain comprises a mix of residential, industrial, and commercial subterrain types. Fort Knox's MOUT training facility is based upon suburban terrain. Lessons learned on suburban terrain may not apply on urban terrain. Many U.S. cities have clusters of deserted buildings suitable for MOUT training on urban terrain.

- Urban terrain contains interior and exterior spaces. Interior spaces offer cover and concealment; exterior spaces offer observation and fields of fire. In order to survive on urban terrain, troops and vehicles must travel through, conceal themselves in, and fight from interior spaces.

- The M113A2 APC has a minimum height of 6'7", that allows the M113A2 to be driven into and through most urban interior spaces. The most common urban construction pattern worldwide is the curtain wall (as opposed to weight-bearing wall construction). The M113A2 can be slowly backed into a curtain wall, using the top rear edge of the hull to push in the concrete blocks between vertical supports. Gross vehicular weight and interior floor loading are critical factors when the ground floor is not the bottom floor. Tracks not only distribute vehicle weight more evenly than tires do, tracks are significantly more durable than tires are in a broken glass and rubble environment.

- The M1A2 MBT is too heavy and its exhaust is too hot and too noxious for the M1A2 to drive through, conceal itself in, and fight from interior spaces. With a minimum height of 9'6" and a combat weight of 32 tons, the M2A2 Bradley is too tall and too heavy. (The M8 AGS, however, might do well on urban terrain because of its height, weight, tracks, diesel engine, and armament.)

- Conflict intensity is a critical factor in MOUT tactics. Restraint is the key to fighting a low-intensity conflict on urban terrain occupied by civilians. A mix of light infantry and military police was appropriate in Panama. The key to fighting a mid-intensity conflict on urban terrain is to fight the environment against the enemy. A mix of light infantry, combat engineers, and assault guns would be more appropriate in a mid-intensity conflict.

- The USMC has a weapon ideally suited for this purpose: the shoulder-fired, multipurpose assault weapons (SMAW). Unfortunately, the U.S. Army declined to buy the SMAW. That decision should be reconsidered.

DAVID A. PILS
Via email

MOUT Efforts Are Overdue, But Still Far From Adequate

Dear Sir:

My compliments to CPT Klug on his article, "Armor's Role in Future U.S. MOUT Doctrine" in the May-June issue of *ARMOR.* It appears to be an accurate assessment of what is going on. Unfortunately, it also reveals the utter inadequacy of the effort to date. I contend that MOUT is being given lip service and the proposed fixes are mere band aids and hyperbole, all lacking serious command focus. Of course, we need to train at lower echelons, but we need to focus on senior-level command leadership.

Fort Knox MOUT Site. The MOUT site is a great effort, so far as it goes. While the idea is wonderful, it only addresses the platoon-level fight, and adding SIMNET will not help much. There is plenty to be done at the platoon and company level. Physical conditioning is a tremendous training task in itself. Figuring out how riflemen in buildings can communicate with buttoned-up tanks down the street and around the corner is another challenge.

USIPECT Concept. Refining offensive MOUT doctrine again, this time from four phases (Reconnoiter, Isolate, Secure a foothold, Clear the area) to seven (Understand, Shape, Isolate, Penetrate, Exploit, Consolidate, and Transition) is meaningless until we put it into practice. The real challenge with MOUT is that it is HUGE! What is needed is training of the command and staff of divisions and brigade task forces to orchestrate the full combined arms team, along with combat support and combat service support. USIPECT needs to be implemented at the division and brigade level, not company and platoon.

Medium Brigades in MOUT. I have no idea how anyone has determined that the yet-to-be developed Interim Armored Vehicle (IAV) units are suitable for MOUT. Armor's role in MOUT is to support the dismounted infantry fight. Armor supports by fire and shock action (moving rapidly, massing suddenly, and delivering overwhelming fire) in close coordination with light infantry who battle room by room and building by building. If you go to lighter, less mobile, less lethal, and less survivable vehicles, you only reduce your chances of success. The measure of effectiveness is not how much better a medium force is compared to a light force. We need to compare the effectiveness of the Abrams/Bradley/light infantry team against an IAV/light infantry team.

UAVs and UGVs. Unmanned aerial and ground vehicles are panaceas that still have very little actual capability in MOUT. Someday, maybe, but not in this day and age. UAVs cannot see into buildings and UGVs cannot negotiate rubble and obstacles, let alone defended stairwells and doorways. Further, the data link to the soldier is tenuous at best.

The Army will demonstrate seriousness about MOUT when it starts command post exercises and tactical exercises without troops in large urban areas. We need to have battalion and brigade command groups develop an OPLAN to seize and secure Elizabethtown, Kentucky (or equivalent), and then wargame it as part of division CPXs. Until then, all of this is just eyewash.

CHESTER A. KOJRO
LTC, AR, USAR (Ret.)

Comments on Suoi Tre Story From a Veteran of the Battle

Dear Sir:

I cannot let 1SG Christopher Worick's article on the battle of Suoi Tre pass without some comments.

I was with Co C, 2/22 INF that morning. We had actually crossed the Soui Samat River late the day before. We were starting to move out for continuing patrol when ordered to move to Fire Base Gold. At first, we put the tanks, M48s, in the lead, but they proved too slow for the now-critical situation. We

bypassed them, breaking a wide trail for them. I only recall seeing two tanks attached that day, along with the M88, but could be wrong. We were equipped with tired M113s (gasoline) but managed to obtain 20- to 25-mph speeds through heavy jungle. My PC went in with 3,000 rounds of .50 cal. and ended with 300 left. Several other PCs had melted and warped their barrels. There is no doubt that the combined arms of armor and mech infantry carried the battle that day. Nor can one discount artillery and air support! Even the two combat engineers I had attached could be seen popping up and firing their M14s. Never saw an F4 that day, but F100s were scraping the trees as we came in.

I did not see it, but I have heard from some 3/22 and 2/22 Recon people, that a B-52 made a low level pass across the battle site as we came in.

There are some personal accounts of that battle posted on our 22nd INF Regiment Society web site at: *http://www.22ndinfantry.org/*

JIM HARDIN
Via email

Thoughts on Improving Author's Guard Mission Analysis

Dear Sir:

CPT Young's article in the March-April 2000 issue ("A Company/Team Guard Mission...") is an interesting piece for several reasons. He has obviously served in the appropriate positions for an officer of his grade and was also an instructor. I would like to offer some observations on his article and some other thoughts.

CPT Young opens with a good definition of the guard mission. But when he moves to the task and purpose he runs in to a little trouble. The task is "to destroy enemy recon," but *what* enemy recon? As the author states later, *FM 100-60* lists enemy forces. The OPFOR recon will be echeloned, just as the combat forces will be. CPT Young's team can expect to encounter elements of the division recon and elements of the brigade recon. In addition, the combat reconnaissance patrols (CRP) will present one or two platoon-sized elements in his sector. If the mission is to destroy all of this, it must be stated that way. The team will also have a responsibility to at least identify the forward security element (FSE) and maintain contact (*FM 17-95*, p. 4-7). An alternate mission statement might be "TM performs a guard to destroy enemy recon through the CRP, identifies the FSE, and maintains contact during battle handover...."

The author next talks about establishing "counterrecon boxes." Unfortunately, no such graphic control measure exists. As depicted in the article, they appear to be engagement areas but are not developed as such. Counterrecon is a term that causes a tremendous amount of confusion. It is the result of a security mission, but not a mission in and of itself (*FM 71-100*, p. A-5)

CPT Young talks about obstacles but not enough to understand what the obstacle intent is for the company sector. The minimum would be a disrupt intent, which would require obstacles in half the maneuverable terrain. It does not appear that this is planned and the absence of an adequate obstacle scheme will cause problems.

The use of fires is not fully developed, as the author does not address priority targets or the use of final protective fires (FPF). In most security area operations, the use of indirect fires is critical as it allows you to engage the enemy without being in a direct fire situation and allows the security force to conduct battle handover and movement to subsequent missions. It would be extremely difficult to execute the mission described without the use of an artillery battalion.

The concept for battle handover and movement to subsequent positions is not clearly discussed. In most cases, this is the hardest part of the whole operation to execute, and often results in a security force that is unable to disengage from the enemy and, as a result, is unavailable to the higher headquarters at a critical time in the coming main battle area (MBA) fight.

The reason for this is related to my earlier comments. Inadequate fire support and obstacle plans make security area operations difficult, if not impossible, to execute.

Tactics, techniques, and procedures (TTP) are critical to executing our doctrine. We have to be careful to address all the critical aspects that will influence a successful outcome.

JACK E. MUNDSTOCK
LTC, IN
28th Field Training Group

Contingency Contracting from Page 37

holders and certifying officials and use their IMPAC cards for support overseas. Area contracting offices can assist IMPAC cardholders by providing vendor lists and information on prices within the contracting area. Contingency contracting personnel will provide IMPAC cardholders with whatever information they need to be able to support themselves. They will also provide IMPAC cardholders with tips for purchasing in the local area.

Logistics Force Multiplier

Commanders and staffs that have a good working knowledge of contingency contracting, their role in contingency contracting, and how to integrate contingency contracting into their scheme of support will find that it is an efficient, effective, and responsive tool for obtaining support. By following the simple guidelines in this article and becoming familiar with *FM 100-10-2*, commanders will greatly influence the quality and timeliness of the contingency contracting support they receive.

Notes

[1]*FM 100-5, Operations,* p. 1-1.

[2]*FM 100-10-2, Contracting Support on the Battlefield,* p. 1-3.

[3]Ralph C. Nash, Jr. and Steven L. Schooner, *The Government Contracts Reference Book,* (Washington, D.C.: George Washington University, 1992) p. 95.

[4]*FM 100-10-2,* p. 1-2.

[5]*FM 100-10-2,* p. 1-3.

[6]*FM 101-5, Staff Organization and Operations,* p. H-53.

[7]Defense Federal Acquisition Regulation (DFAR) 213.301- Government wide commercial purchase card (Revised October 21, 1999).

[8]Nash, *The Government Contracts Reference Book,* p. 58.

[9]Brigadier General William L. Bond and Major Anthony L. Castrinos, "Contingency Contracting: Strengthening the Tail," *Army Logistician,* May-June, 1999, p. 6.

MAJ John Shannon Womack is a Contingency Contracting Officer in the Third Infantry Division (Mech) at Fort Stewart, Georgia. Prior to entering the Acquisition Corps, he commanded C Company, 1-34 Armor at Fort Riley, Kansas. He holds a BS degree in Agricultural Business from Arkansas Tech University and a MS degree in Acquisition Management from Florida Institute of Technology. He is a Certified Professional Contract Manager and is selected to attend the U.S. Army Command and General Staff College.

Uniform Discipline: A Good Indicator Of a Unit's Deeper Problems?

by Command Sergeant Major Kenneth O. Preston

Over the last several years, I've talked with a lot of young sergeants who, after several years in the Army, were choosing to return to the civilian work force. I asked these young, bright, noncommissioned officers, most of whom had earned the right to wear the rank of a sergeant in only a few years, why they were getting out. Their reply was that the Army was not what it used to be.

Based on the answers that I received from these potential future master gunners, platoon sergeants, first sergeants, and sergeants major, I asked them several more questions to try to understand their frustration and dissatisfaction with their military service. I asked, why do you feel the Army is not what it used to be? Their reply was that noncommissioned officers do not have the authority they used to. I asked, why do you feel that you have lost your authority? They replied that the new soldiers coming into the Army could do what they wanted. I asked, do these soldiers do what they want in violation of regulations, policies, and procedures? They responded that in many cases soldiers did what they wanted because they knew that they would not be punished. These young sergeants had given up trying to correct acts of indiscipline and making on-the-spot corrections.

It's taken a while to peel the onion back to really identify the root causes of the issues those sergeants raised over the last several years. Interesting enough is that the sergeants I spoke to, in different units spread all over the world, responded with very similar answers to the questions. One of the root causes of their dissatisfaction is basic discipline in units.

Over the last couple of years, I had the unfortunate opportunity to see first-hand the circumstances behind the death of two soldiers in separate incidents. Following both accidents, I visited the accident sites as part of the investigation team. The cause of death in both cases was attributed to not following established procedures or unsafe operation of a particular piece of equipment.

I was coming from a unit that had very specific uniform standards in the field. One of my observations upon arriving at the first accident site was the appearance of the senior leaders of the unit. I observed the commander of this particular unit wearing his personal weapon in a holster that was strapped to the side of his leg. His LBE was not assembled as prescribed by unit policies. You may think this has little significance on the death of a soldier in training, but after looking at the discipline and standards of uniforms of all the soldiers in that particular unit, I questioned the level of discipline and their standards in safety, PMCS of equipment, weapons accountability, etc. But during this investigation, this thought was a theory.

At the second fatal accident site that I visited, I observed much the same individualism in uniform standards. Surprisingly, many of the nonconformations to the established uniform policies were by the senior leaders of the unit. Specifically, these leaders were the more senior NCOs, in the rank of SSG and above, the officers, and the warrant officers. The official cause of death for the soldier involved was not wearing a seat belt. However, my observations tied in with my theory that if uniform discipline was suspect, then what was the level of discipline in other areas? Is uniform discipline an indicator of the discipline in a unit?

I have recently spent a lot of time trying to understand why noncommissioned officers involved in acts of indiscipline made the decisions that compromised their integrity. Many of these incidents involved after-duty socialization between a sergeant and his young soldiers. After talking with the sergeants involved in two different incidents, I found that they were not held responsible for their soldiers in many areas. This is a very broad area of subjects that include accountability, training, and appearance. I believe both of these sergeants did not know they were accountable because the unit leadership did not hold them accountable.

After thinking about what a corporal or sergeant is responsible for, I've come to the following conclusions:

- When unit leaders do not conform to established policies pertaining to the wear and appearance of the uniform, they take authority away from our junior noncommissioned officers to make uniform corrections on their soldiers. In most cases, our young corporals and sergeants are responsible for two or three soldiers. One of the key areas that help the young leader step away from his peers and assume a position of authority is the opportunity to enforce standards and develop discipline in soldiers. Uniform discipline forms part of the foundation of basic discipline that enables our junior leaders to become established in a position of authority.

- When senior leaders do not conform to established policies and procedures to an exact standard, they demonstrate that standards are not important. "Lead by example" is one of the eleven principles of leadership. This principle is a form of communication that sets the tone of discipline by senior leaders to their subordinate leaders. Junior leaders lose their position of authority to make on-the-spot corrections. Once this ability to make on-the-spot corrections goes away, these junior noncommissioned officers become less involved with their soldiers. In many cases they assume the role of a higher paid soldier and not a noncommissioned officer in a leadership role.

The next time you are at an official function where the attendees are wearing dress uniforms, notice how all the senior leaders will "check out" each other's uniforms for appearance. We cannot help ourselves; this was a trait that has developed in us over the years. My theory is that now, because many unit leaders do not hold their noncommissioned officers accountable for their soldiers' appearance, these junior noncommissioned officers are not developing their ability to see or correct substandard performance. By not developing this characteristic in our junior noncommissioned officers, you will see standards in all areas begin to drop. Look at units that have high or above-average vehicle accident rates during training, acts of indiscipline both on and off duty, loss of sensitive items, or duty-related soldier injuries. If you look at the appearance of soldiers in the field, those who conform to standards will be the exception and not the rule.

Soldiers deserve to be inspected everyday, in garrison and in the field. Give the authority to enforce uniform discipline back to our noncommissioned officers. In doing this, the number of discipline-related incidents would go down, the junior noncommissioned officers will have the authority they are seeking, and these young leaders we are growing will be much stronger. Additionally, we may not see as many violators of the earring policy on Saturday in the Commissary.

CSM Kenneth O. Preston is the Division Command Sergeant Major of the 1st Armored Division.

A Critique of the Emperor's Wardrobe

The Kinder Gentler Military: Can America's Gender-Neutral Fighting Force Still Win Wars by Stephanie Gutmann, New York: Scribner, 2000; 300 pages; $25.00, Online $17.50.

Stephanie Gutmann's hard-hitting analysis of the services in the wake of feminist reforms, Aberdeen, and Tailhook, will be read by many soldiers, but will never be discussed in professional development sessions nor will she be invited to speak on her views. Her book should be discussed around the Army, but her views are politically incorrect and thus will not get an open hearing. Gutmann answers the question she poses (can the kinder gentler military still win) simply — NO. She argues with passion and compelling logic a case built on sound research that the feminization of the military is fundamentally unsound. Gutmann argues that readiness in the armed forces has been sacrificed to a social agenda that is not in the least concerned with achieving military effectiveness.

Gutmann argues, in defiance of the feminist tradition, DACOWITS, and the U.S. Congress, that men and women are "different." Gutmann asserts that the idea of the sexes being equal is not the same as concluding that the sexes are identical. According to Gutmann, in order for the goals and aspirations of the feminists to be realized, one must believe that 18-year-old men and women are absolutely interchangeable in combat units. The evidence does not support this conclusion. Gutmann drives that point home with passion and conviction. In every facet of the military life, from ejection seats to fitness standards, the services have had to make extraordinary accommodations in order for women to be treated "equally." Gutmann notes that the result has been not equal standards, but rather the absence of standards. In short, no one fails. The unintended outcome of these accommodations is that equality is achieved at the expense of excellence. More seriously, Gutmann believes that adjusting physical standards may, in some cases, involve risk to the lives of soldiers in combat zones.

Gutmann contends that the pervasive nature of the attack on the essential qualities of soldiering amounts to the criminalization of the warrior spirit. Competition is suspended in favor of building self-confidence. Trainees who are challenged to the limits of their endurance, or rather what they perceive are the limits of their endurance, have only to say so and take a "training break." Gutmann reviews extensively the notorious Tailhook convention and concludes that the search for wrongdoing took on Stalinesque proportions. In short, we went far beyond punishing the guilty. Pilots who referred to the investigation as "Witchhook" were, in her view, right. Gutmann argues that the zeal of the investigators of the debauchery at Tailhook had as much to do with the desire to attack the culture of soldiering as it did to eliminate inappropriate behaviors. This seems a stretch, but she marshals significant evidence that supports exactly this conclusion.

How did this happen? According to Gutmann, destruction of the military culture's rigorous standards and hard living stemmed from, "one of the 'ugliest trends of our time,' the split between 'elite' civilians and their military." The Vietnam War, draft deferments and anti-military feelings on campuses across the country produced this "split" by the mid-'70s. The elite and cognoscenti perceive that they have no stake in the military other than to "fix" it. The result is social experimentation that in the '90s pulled the fangs from our armed forces.

Other factors conspired to weaken the services against the forces of "reform." The end of the Cold War and the apparently antiseptic nature of combat in Desert Storm also played a role. The pundits and policy wonks have concluded that wars need no longer be the business of rugged, dirty young men killing each other at close quarters. It is a matter now of pushing buttons. In any case, they argue that large wars like Desert Storm will never occur again. According to this school of thought, no rational actor will take on the United States. If we have indeed arrived at the end of history, then the consequences of the reforms of the '90s, including same-sex basic training and persistent attacks on and revisions of the principle of combat exclusion, will not matter. But what if Desert Storm is not the end of history, and Kosovo is not the harbinger of a new kind of warfare?

The service chiefs and their civilian masters in the Department of Defense have contributed to the problem of congressional reform and persistent feminist attack by buckling with little resistance. Only Marine Commandant General Krulak, she asserts, had the courage to admit readiness problems and to argue that same-sex training did not make sense in terms of improving readiness. Krulak's Marine Corps asserted that the values of the Corps have stood the test of time and are for that reason immutable.

Having diagnosed the illness, Gutmann offers a prescription. Her solutions include: eliminating recruiting quotas for women, separating the sexes during basic training, enforcing firm, exclusive standards, and implementing MOS-specific qualifying tests. These and other solutions, including allowing dissenters to speak, would, according to Gutmann, transform the services from "…the corporation at its dreary, petty soul-killing worst…" back to a service designed to work the nation's will. Her armed forces are about killing people and breaking stuff in the name of the United States. Finally, she would open any MOS to any person who can meet objective standards for that MOS.

Gutmann is strident and hard to take, but many of her conclusions have the ring of truth. For those of us who have made the transition from respecting women in the traditional sense to respecting women as soldiers, Gutmann's arguments, while persuasive, do not entirely persuade. Female soldiers have proven themselves despite anecdotal evidence to the contrary. Patriots of whatever race, creed, color, or sex should have the opportunity to serve if they are able. Gutmann's argument for objective standards does, however, make sense. If you are unable to carry the load, and cannot meet the physical requirements for a task, then you should not be afforded the illusion that you are competent and able. Objective standards, with all jobs open to all who are able to meet those standards, may be the way to bridge the gap between feminist political agendas and what individual young women may wish to attempt. Finally, failure, for all of us, should be possible or we will not value what we attain. Whether we have the courage to make mid-course corrections or even openly discuss the way we "man" — or is it "person" — the force remains to be seen.

GREGORY FONTENOT
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Into Cambodia: Spring Campaign, Summer Offensive, 1970 by Keith William Nolan, Presidio Press, Novato, Calif., 1999 (paperback edition. Hardback first published in 1990); 451 pages; $18.95.

Keith Nolan has written three other books on the Vietnam War; the best known are *Battle for Hue* and *Death Valley*. He approaches *Into Cambodia* with a desire to share the story of the men who fought and died in a little known portion of an unpopular war. He has created a soldier's story through the memories of hundreds of those who fought in Cambodia. It is the number of interviews conducted that makes this book a pleasure to read.

In the introduction, the author explains his desire to share this story. The focus in 1970 was on the political nature of the Vietnam War and the deaths of students at Kent State, rather than on the exploits of soldiers in the field. This is why the book is focused at the tactical level.

I began the book expecting a tutorial on geopolitics and an explanation of the behind-

closed-doors negotiations going on to create the Vietnamization that was the central strategic aspect of the American withdrawal. This was not the case. The book begins with stories about the lives of soldiers in the field and their daily struggles to stay alive and still accomplish their mission.

The author shows, through a series of anecdotes, the conflicting role the U.S. Army played in Vietnam in 1970. Everyone knew that America was leaving and no one wanted to be the last U.S. soldier killed in Vietnam. So they did their jobs in the bush, but without the bravado and energy that existed in 1965. From this demonstration of the murky situation that every soldier faced, the author continues the story by describing the reactions and then the action of attacking the North Vietnamese Army camps in the Cambodian-Vietnamese border area.

The author divides the book into sections, each section telling the story of a different unit. He talks about the 11th Armored Cavalry Regiment; 1st Cavalry Division; 4th Infantry Division; 25th Infantry Division; 3rd Brigade, 9th Infantry Division; and the 199th Light Infantry Brigade. For me this book was especially interesting, as I am currently assigned to the 11th ACR. The insight into the past of my own unit was an added bonus.

I enjoyed this book, not as someone interested in military history, but as someone interested in soldiers. The nature of the book — telling the story through the eyes of the privates, sergeants, and junior officers who fought the campaign — allows a person to see what went through their minds and what combat may be like. The author fills the book with stories about men like LT Cambria. His is a story of frustration from being denied the right to fire at fleeing NVA soldiers, because they had not fired on him first:

Cambria was frantic and his grunts were screaming from behind their gun shields, "We gotta fire! We can see 'em, we gotta fire!"

White knuckled as he gripped the handles of his .50-caliber machine gun in the track commander's cupola, thumbs on the butterfly trigger, Cambria looked into the dense underbrush that was now only fifty meters in front of them. His heart was pounding! To hell with the captain! Cambria was about to order his platoon to commence firing when the wall of jungle suddenly erupted with RPGs and RPDs and AK47s. There was a hellish explosion to Cambria's right and something slammed into his face like a fist as he instinctively pulled back on his .50-cal and saw everything blur at the vibrating recoil. (page 106)

This is a book that both history buffs and even those who are not interested in history will enjoy. It is also a great book for soldiers assigned to the units who participated, because it provides some very detailed accounts of the actions represented by the streamers on their unit colors. The book also describes the struggle and success of armored and mechanized forces in extremely restricted terrain, making it of interest to all Armor/Cavalry leaders.

CPT BRIAN L. STEED
Fort Irwin, Calif.

How America Fought Its Wars: Military Strategy from the American Revolution to the Civil War by Victor Brooks and Robert Hohwald, Combined Publishing, Conshohocken, Pa., 1999; 489 pages; $29.95 (hardcover).

Many books have been written on the events of the first century of American history. However, few contain the unique analysis of the battles, leaders, and outcomes that Victor Brooks and Robert Hohwald cover in this book. Brooks and Hohwald look closely at the American Revolution, the War of 1812, the Mexican War, and the U.S. Civil War. Each war is explored in great detail, with a final discussion on alternate strategies and outcomes, and their subsequent ripple effects through history. Additionally, their analysis of both the American Revolution and the U.S. Civil War contain evaluations of the key leaders, to include a grade for each general and supporting evidence to back their evaluations.

The authors first provide a chronological story of the wars' primary battles and campaigns, placing special weight on strategies and tactics. Then they analyze the impact of each event to illustrate its effects on American history. Finally, they discuss alternate strategies and outcomes, and emphasize the importance of those outcomes by showing how the United States would look under different circumstances. It is this analysis, along with the evaluation of the key leaders, that makes this book truly unique, and unquestionably fascinating.

How America Fought Its Wars does, however, fall short in one area. Brooks and Hohwald include only minimal maps to aid in the visualization of their descriptions. I found myself constantly searching for maps to help me to better comprehend their analyses. Inclusion of more maps, along with some charts and artwork, would turn this book into a true masterpiece; without those maps, the book never quite reached the clarity necessary in an analytical work.

Overall, *How America Fought Its Wars* is an informative and insightful look at the strategy and leadership of the first hundred years of American warfare. I recommend this book to any officer interested in that period of American history. Many tactical, strategic, and leadership lessons, on a theoretical level, can be learned from this book. The application of these lessons learned to the armor/cavalry community is limited, but still useful. I would definitely buy this book for my own professional library despite the lack of maps that limits the book's appeal.

TIMOTHY S. JACOBSEN
CPT, Armor
Ft. Knox, Ky.

American Generalship by Edgar F. Puryear, Presidio Press, Novato, Calif., 2000; 374 pages, extensive notes, index; $34.95.

It's a bit difficult to be objective about a book on generalship when it has already been reviewed by numerous generals (some my personal friends) who wrote glowing accolades about it! After a second reading, however, I believe the accolades are well deserved; this is a fine book on an unusual subject.

Prof. Puryear wrote a well received earlier book, *Nineteen Stars*, about Generals Marshall, MacArthur, Eisenhower, and Patton. It got him to wondering what sets one man so apart from his peers that he is selected for general officer rank. Then he considers what further separates generals to the point where some rise to four-star rank. The author's research is remarkable; he interviewed over a thousand general officers, including over a hundred four-star generals, to learn from them what they believed led to their success.

In Puryear's opinion, it all boiled down to one thing: character. Then he found he couldn't define character adequately, so he set about describing, through anecdotal comments from his general officer sources, those things that reflected character as soldiers have come to understand that term. Each chapter in this book describes one such aspect of leadership: selflessness, the ability to make decisions, a willingness to challenge assertions and an aversion to "yes men," the importance of reading about other leaders, mentoring, consideration for others, an ability to define issues and delegate tasks, and the readiness to focus on problems rather than on placing blame. The text is replete with direct quotations of experiences from his sources, and it's interesting how many of our own experiences mirror these.

Two chapters are particularly important and should be read again and again as the reader advances in grade: decision-making and the importance of reading. Decision-making is the essence of leadership, at all levels of command, in peace as well as in war. How you absorb and evaluate the recommendations of your subordinates, how you reach a conclusion as to which action to follow, and how much you leave to your subordinates to decide are all critical parts of the decision-making process. General Marshall commented: "I must have assistants who will solve their own problems and tell me what they have done." That applies equally to company commanders and their platoon leaders. I used to tell my staff and commanders: "Don't bring me problems; I already have problems. Bring me solutions." This chapter shows how different leaders arrived at their decisions, and the thought processes they used. That's what makes this part especially useful.

The chapter on reading is also significant, first, because we tend to fill our days so full

of short-term objectives that we seldom take time to reflect on where we're going; and, second, because none of us can ever experience a broad spectrum of troop-leading and decision-making, and it helps to read about the varied experiences of others, how they were challenged, and how they resolved problems. This applies to all grades, not just generals. General Ridgway commented: "A man by himself can have but a very limited personal experience. So you've got to draw on the experience of others, both in reading and in talking...." General Bradley added: "You first study the theoretical handling of troops; you study the principles of war and principles of tactics and how certain leaders applied them. You are never going to meet with that exact situation, but when you know all these principles and how they were applied in the past, then when a situation faces you, you apply those principles to your present situation and hope you come up with a good solution."

One thing that keeps appearing through all the stories, although it is never emphasized, is opportunity. Eisenhower commented that the best way to learn how to make good decisions was to "Be around people making decisions." But not everyone gets such opportunities. Eisenhower himself ran afoul of the Infantry Branch Chief who refused to nominate him to CGSC. But Eisenhower had a mentor, General Fox Connor, who arranged a temporary transfer to the Adjutant General Corps that had a vacant nomination — a golden opportunity! Pershing, Eisenhower, Patton, Truscott, Ridgway, Shalikashvili, Shy Meyer, all comment on the advantage of timely opportunity, and Puryear notes in writing about Eisenhower: "It would be naive to deny that there was a certain element of luck involved in his success." Not every leader gets such opportunities, and not everyone who does will recognize them. So be aware, stay alert to what is happening around you, and when luck or whatever places that opportunity before you, seize it!

A final comment, especially for young leaders. General Shalikashvili said about this book: "Not a dry list of 'dos and don'ts' but a highly readable collection of experiences and thoughts of countless practitioners." A fine endorsement. Yet he gives a finer one on pages 230-231: "When I was first commissioned, I was assigned to Alaska and my platoon sergeant was a Sergeant Grice. Grice devoted his life to making me the best platoon leader around... I wish every second lieutenant could have a Sergeant Grice. He is the one who taught me what caring for my men really entailed. From him I learned that when I walked down the gun line and asked the soldiers some questions, that if I didn't know the answers better than the soldiers, they would see through me, whether I really knew what I was talking about or not. By the way, I learned that this is as true for a platoon leader or platoon sergeant as for a four-star general." Amen!

Yes, this is a fine book, interesting, readable, thoughtful, sometimes provoking and challenging, full of insights on the essence of leadership. Get it, buy it, or borrow it, read it, read it again. And again!

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God's Children by Harold Coyle, Forge, February 2000; 316 pages; $24.95, ISBN 0-312-86296-2.

Harold Coyle's fiction always seems to be one step ahead of actual military missions. In earlier books, Coyle foreshadowed U.S. military operations in the Middle East and wrote about how an armor campaign would be conducted. In *God's Children,* Coyle, a VMI graduate and former armor officer, writes of an Eastern European peacekeeping deployment in war-torn Slovakia and about a young officer's trials in accomplishing a confusing mission.

The novel is set in the near future, with U.S. forces six months into a NATO-led mission aimed at separating the ethnic Hungarian minority and the Slovak majority. The main characters are two lieutenants who struggle to conform to the responsibilities of command. First Lieutenant Nathan Dixon is an experienced young combat leader who is assigned to a patrol with Second Lieutenant Gerald Reider, a new platoon leader fresh out of West Point. While on the patrol, the conflict between the two warring parties erupts again, placing the peacekeeping force, and in particular the patrol, in a precarious position.

The plot is ripped from today's headlines. Coyle has written a great fictional account of what can go wrong when a peacekeeping mission has no clear objectives. The only fault is Coyle's framing of the Hungarian issue. Hungary is a member of NATO, and a mission into a nation that is conducting ethnic cleansing of Hungarian minorities would have serious ramifications in Brussels and Hungary. Coyle underplayed this aspect of the story.

God's Children is an excellent story about young leaders thrown into an unclear situation on the ground. I recommend this book because of the important message it tells about the need for clear and concise mission statements so young leaders, such as Coyle's characters, will understand what they are doing "over there."

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The Battle for Pusan by Addison Terry, Presidio Press, Novato, Calif., 2000; 256 pages, maps, photos; $27.95.

The 50th anniversary of a major historical event usually generates new materials and renewed interest in aspects of that event. So, hopefully this will continue to be the case with the Korean War of 1950-53. Major (Ret.) Addison Terry's personal memoir is that of one of the first American soldiers to be committed in the summer of 1950, from July until he was wounded and evacuated back to the States in September. He wrote his account during recovery from his wounds at the Fort Benning Army hospital, while his recent experiences were still vivid. The manuscript was then packed with household goods as his family was transferred on numerous duty assignments, until it surfaced again in 1998 while he was disposing of old files in a barn on his Texas farm.

Commissioned as a second lieutenant through ROTC at Purdue University, Terry was assigned to B Battery, 49th Field Artillery Battalion, 7th Division, part of the Army of Occupation in Japan. When the North Koreans invaded, he was reassigned and served as a forward observer with the 8th FA Battalion, supporting Lieutenant Colonel Mike Michaelis' 27th Infantry Regiment, 25th Division. The 27th "Wolfhounds" were called on as a "fire brigade" to thwart the Communist NKPA thrusts, from Masan in the South to the "Bowling Alley" fronting Taegu, as General Walker's Eighth Army was forming the "Pusan Perimeter" along the Naktong River line.

All units were at less than two-thirds TO&E strength, and Terry reflects the bitterness of the GIs over the "police action" and over Secretary of Defense Louis Johnson — later fired as a scapegoat by President Truman — who had "cut the fat" out of the military budget. As a result, FOs had to lay wire commo for their old EE8 telephones, the equally old SCR 610 radios didn't work, and the light WWII M24 Chaffee light tanks, early model bazookas (2.36"), and 57mm recoilless rifles couldn't stop the Russian-built T-34/85s. Rebuilt WWII medium Shermans shipped from Japan greatly encouraged the infantry, and in a counterattack to Sachon Pass (Chinju sector) these tanks generated great confidence, Terry says, to "kill gooks," slamming their rounds into the "NKs" on the hills from their 75s (actually 76mm on M4A3E8s) of the 8072d Medium Tank Battalion, incorporated into the 89th Medium Tank Battalion on 7 August. Ironically, the old narrow-tracked "Easy Eight" Shermans turned out to be better at negotiating steep mountain trails than the newer M26s and M46s. But in the "Bowling Alley," so named for the AP shell tracers and explosions echoing between the hill ranges, M26 Pershings (of C, 73d Tank Battalion), with their 90mm guns, smashed T-34s and self-propelled SU-76s.

Terry's book is filled with vivid and detailed accounts of an FO team working with line infantry — firing M2 carbines on full auto, calling in fire missions, GIs attacking with bayonets fixed, boiling coffee over Sterno chips, spooning C-ration fruit cocktail from aluminum canteen cups, taking his entrenching tool into the bushes, spreading a shelter half over his foxhole, climbing the leg-buckling hillsides, and running under fire ("My heart was beating so hard that it was making an echo in my helmet").

He also describes practices gained by experience, like firing an artillery concentration above the Reds on a steep hillside to start a rock avalanche, dragging NK dead with an ammo belt in case there was a live grenade or booby-trap beneath them and, in night-fighting, throwing grenades which would not reveal someone's position like an M1 muzzle blast would.

The book has appropriate photographs and sketch maps. This is a detailed and vivid account of front-line Korean combat. It reflects the price paid for lack of preparedness for war, yet also the professional satisfaction in stopping an enemy attack with a crushing TOT, the pride in a unit ably led in adversity, and the increasing confidence as new equipment and new units finally begin arriving to turn the tide of war.

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The T-34 Russian Battle Tank by Dr. Matthew Hughes and Dr. Chris Mann, published in their Weapons of War series by Spellmount Ltd., The Old Rectory, Staplehurst, Kent, TN12 0AZ, England; hardback, 96 pages; retail $17.95, Online $12.57.

One of the world's classic tank designs, Russia's T-34 is rated as one of the best tanks of WWII, if not THE best. When the German army came into contact with them in 1941, it outclassed their tanks and anti-tank guns. It was even suggested that the faster way to counter it was to copy it. Aspects of the design are found in later generations of tanks, showing how great its influence was.

Beginning with a long but well-written account of Soviet tank development, tactical and strategic theories for their use, and the effects on both of Stalin's purges of the 1930s, this book describes the design of the T-34 in considerable detail, including the purchase of the American Christie design from which it was derived. The final design is described in detail, including some very good interior photos of vehicles sent to the then-Western Allies for evaluation. These are followed by accounts of it in action during WWII, from the early dark days of Operation Barbarossa through its progress as the tide turned, which saw it in action in Berlin. Design changes introduced on the way are covered as they happened, and another chapter describes post-1945 service, which shows that it was a potent vehicle for several years before it was eventually outclassed. Only the final chapter on marks and variants falls short of the standard of the rest of the book, being confused and mixing up matters while using the German identification system and yet calling it "British."

These accounts are supported by a well-chosen range of photos. Most have been seen before, but they are well printed and include a rare good color photo showing tanks bogged in the early 1941 battles. Color coverage includes plans of a 1941 pattern T-34/76, cutaway of a T-34-85, and several side views showing typical camouflage schemes. Technical information tables complete a good study of this important tank. It may add little new to other books, but it is as good an account as can be fitted into a book of this length.

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Software

Close Combat: Battle of the Bulge, by Mindscape under the SSI label, est. $39.99. (More information and demo download available at *www.closecombat.com* or *www.ssionline.com*)

System Requirements: P200 or faster, WIN 95/98, 32MB RAM, 60MB HD space, 4MB video card and 4X CD ROM. (Internet or network connection for head-to-head play.)

Reviewed On: PIII-500, WIN 98, 128 MB RAM, 32MB NVIDIA RIVA TNT2 graphics card and 40X CD ROM.

Close Combat: Battle of the Bulge is Mindscape's fourth and latest release in the highly popular series. This game is clearly worth a look. It has many features that will appeal to wargame enthusiasts (especially lovers of real-time strategy games) including a serious attempt to achieve historical accuracy, good visuals and sound, real-time decision-making, and a decent simulation of soldier behavior.

This chapter in the *Close Combat* story revolves around one of the most pivotal episodes in World War II, as the Germans take one last desperate gamble in the Ardennes. The Americans fight to buy time for reinforcements as the Germans attempt to break through. Unlike earlier titles, *Battle of the Bulge* adds a new strategic element that gives the player more opportunity to influence the larger picture. However, the game is still a simulation primarily designed to focus on small unit actions. The player must coordinate infantry, armor, and fire support assets to capture "victory flags" in and around small towns. Units maneuver through the countryside, occupy buildings, and fight from street-to-street to maintain the tactical advantage.

From the technical game play perspective, the designers of *Battle of the Bulge* did a pretty good job. The tutorial is a little sparse, but walks the player through each of the key aspects of the game. Setting up play is simple, with the option of fighting an individual battle or one of three campaigns. You can view forces and set competency levels before choosing to play either the U.S. or German side. (Realism settings are also available, but that would be a little too much like cheating!) During the game, players will be impressed with the outstanding sound effects and will enjoy most of the visuals. Game controls are relatively straightforward and simple to use. Orders are given to predesigned units rather than individual soldiers, which makes the whole process manageable.

From the tactical perspective, *Battle of the Bulge* does a respectable job of rewarding the player for use of sound small unit tactics, techniques, and procedures. Establishing support by fire positions and concealing movement through the use of terrain and smoke are critical to success. Additionally, soldiers in each unit react to the stress of combat. Unlike other similar games where units follow orders without regard to the emotional reaction of the troops, this one takes that critical factor into account. Units that take a large number of casualties may hunker down and refuse to obey orders or, worse yet, leave the battlefield. Another feature that I particularly liked was the way the game represents and plays line of sight. A colored bar from gun-to-target identifies fields of fire as clear, partially obscured and blocked. Units can engage partially obscured targets, but at a reduced effectiveness; a realistic feature not reflected in many Army training simulators and devices.

Before pointing out the game's shortcomings, I must admit up front that I am not a big fan of real-time strategy games and haven't played any of the other games in the *Close Combat* series. First, while graphics are fairly impressive, the background/terrain and scale of the map both make locating units at a glance somewhat difficult. Second, *Battle of the Bulge* didn't do much to change my opinion about real-time games. It seemed that at any given time, the action was either too slow or too fast. Once my units made contact, I had a hard time effectively issuing orders and following message traffic. While I found this to be a problem, experienced players will probably not see this as a flaw, but will more likely consider it an accurate portrayal of combat. And although I didn't try the head-to-head option, this particular complaint might not apply in that mode, as both players would face the same difficulties and the actual fight would probably unfold at a slower pace. Lastly, the player doesn't have the option to build custom units, but I guess that's expected of any game that tries to maintain historical accuracy.

Disregarding my personal prejudices, this is a well-designed game with many attractive features. For those of you who like the "Command and Conquer" style of real-time strategy games and are interested in a more realistic historical military simulation, there's a good chance that *Close Combat: Battle of the Bulge* is the right game for you.

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New M1A2 SEP Tanks Are Fielded At 3-67 Armor, Fort Hood

The 3rd Battalion, 67th Armor, part of the 4th Infantry Division at Fort Hood, Texas, is the first unit to receive the new M1A2 SEP (System Enhancement Package) tanks. These 45 new tanks provide improved performance on many of the systems in the current M1A2, including second-generation Forward Looking Infrared (FLIR) viewers that more effectively deal with targets at extended ranges.

The new tanks have improved microprocessors and additional memory, and a mass memory unit that houses the Abrams' embedded battle command software and digitized color maps, accessed with removable memory cartridges. The embedded battle command software is compliant with the Army common operating environment, so it can communicate with other Force XXI digital platforms.

The second-generation FLIR improves the capability of the commander's independent thermal viewer, which permits the tank commander to search for targets at extended ranges. The driver has a new integrated display which can provide him with steer-to-navigation data and system status reports. The display receives information from the Global Positioning System (GPS) satellites and can identify the vehicle's position in relation to the next objective. This allows the driver to move from point to point on the battlefield without direction from the tank commander or constant reference to maps or terrain features.

Soldiers from 3-67 Armor are attending a 6-week instructional course, which will culminate in a 4-week gunnery this summer. The tanks will accompany the 2d Brigade Combat Team to the National Training Center next April.

The regiment's 1st Battalion has been turning in its tanks to the Texas National Guard in preparation for receiving the next batch of 45 M1A2 SEP tanks in October.

- Information for this article was supplied by SPC Kimberly Bethel, 4ID PAO Office

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