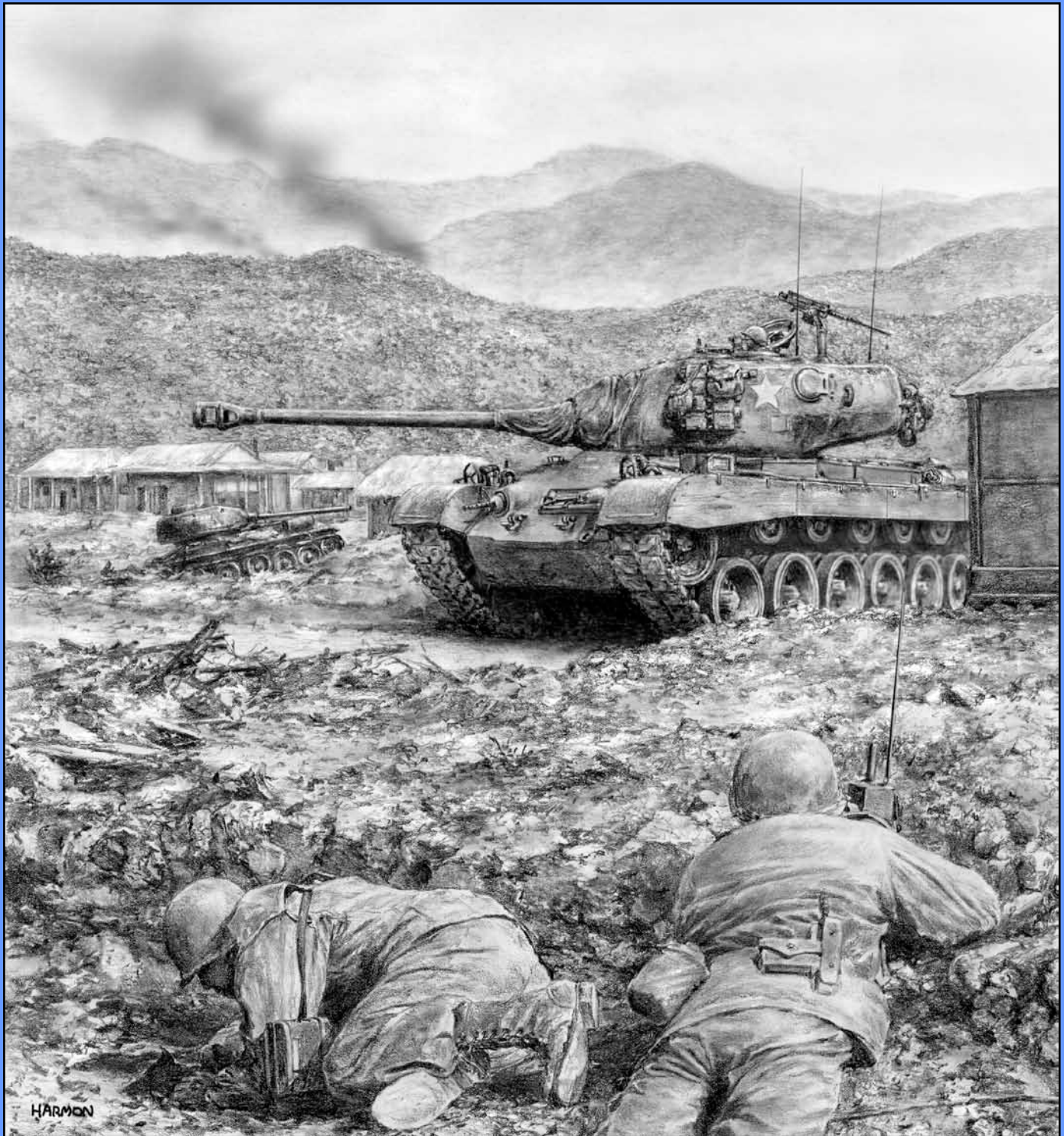


ARMOR



The U.S. Army: Tanks and the Korean War *See Page 7*



Saddle Up... Tonight We Ride

"Civilians may think it's a little juvenile to worry about ribbons, but a civilian has a house and bankroll to show what he's done for the past four years." — Bill Mauldin

Want to start a good argument? Introduce the topic of awards into a conversation with military folks. Just about everyone, past and present military, can furnish a tale of some gross injustice involving the awards system. Look to recent events, specifically the controversy over the Air Force and Navy's awarding of Bronze Stars to colonels who waged the battle that was Kosovo from hot spots like: Whiteman Air Force Base, Mo.; Ramstein Air Base, Germany; and Naples, Italy. Let's not enter into that fray: the Army did not award any Bronze Stars. But take note of one disturbing trend from that affair — of the 185 Bronze Stars awarded by the Air Force since the conflict in Kosovo stabilized, eight out of every nine medals have gone to officers, mostly lieutenant colonels and above. Kinda makes you go hmmm...

In the litany of gripes lodged against the award system, one complaint resonates, and that is the appearance of varying standards, not only between different organizations, but often within the same organization. A previous company commander of mine aggressively awarded medals, arguing that if he were a civilian employer he could reward his subordinates with raises or cash bonuses. Since these tools were not available to him, he utilized awards to recognize deserving soldiers. But many commanders view this practice differently, toeing the line with a tough stance on awarding medals, fearing a diluted awards system. (In 1998, the Army recognized one in every 2.2 soldiers for distinguished achievement or service, awarding either the Legion of Merit, Meritorious Service Medal, Army Commendation Medal, or the Army Achievement Medal.) However, when soldiers of a like rank gather at schools, they often find a disparity in medals earned for similar achievements. Commanders have a tough task in striking a balance while preserving the worth of an award.

The awarding of commander and CSM coins has also spurred controversy. The *Army Times* noted that the Army is preparing a service-wide policy that will govern who can issue coins and how much they can spend coining deserving soldiers. The article led soldiers to write angry rebuttals, pointing out many soldiers value a coin more than an award, and questioning the wisdom of fixing something that was not broke.

I side with the letter writers and vote against any policy that would impede a commander's or CSM's ability to award a coin on the spot to a worthy soldier — I suspect those coins become quite special to the awardees.

Which brings us to my reason for raising this topic — the U.S. Armor Association's Saint George Award program. There are few excuses for failing to plan or forecast an award to allow its presentation before the awardee departs, yet this happens all the time. Offenders recoil in horror at the association's inability to process the award immediately, "This is a great soldier and we need to get him the award!" Suddenly, the Association and the good ladies who process the award become the Great Satan and are blamed if the award is not presented on time. No one should get their award in the mail or at their next duty station. Of course, this means taking care of soldiers and insuring that the award is prepared, processed, and bestowed properly. I also object to soldiers paying for and writing their own award, a practice that tells a lot about a soldier's unit and chain of command. Unfortunately, we see this all too often.

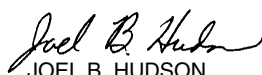
Finally, the criteria for the Saint George awards are clear. Please do not ask us to make an exception. We view our role as guardians at the gate, protecting the award for those who wear it. Bending or violating the criteria to gain the St. George Award does a disservice to all those who have earned it.

— D2

By Order of the Secretary of the Army:

ERIC K. SHINSEKI
General, United States Army
Chief of Staff

Official:


JOEL B. HUDSON
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Secretary of the Army

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Mech Commander Adds Detail About Suoi Tre Account

Dear Sir:

I enjoyed the article on "The Battle of Suoi Tre," written by First Sergeant Christopher P. Worick in your May-June 2000 issue of *ARMOR*. I know it is difficult to gather first-hand detailed information on an action after 30+ years. The author has done a fine job, all things considered. There are a few items I would like to furnish that might be of importance from my first-hand point of view as commander of the 2/22 Inf (Mech) during this operation.

The 2/22 Inf (Mech) joined up with the 2/34 Armor (-) on March 18 to cross the Bach Sohn Doi near its junction with the Soui Mat stream. The Armor battalion had 18 tanks and a tank retriever (M-88), plus their headquarters vehicles. To facilitate operations, we cross-attached elements to establish the task forces as follows:

- 2/22 Inf (M) (-)
 - Co B, 2/22 Inf (M)
 - Co C, 2/22 Inf (M)
 - Co A, 2/34 Armor
- 2/34 Armor (-)
 - Co C, 2/34 Armor
 - Co A, 2/22 Inf (M)

with further internal cross attachments.

The crossing site was just north of a fire support base at Xa Loc Ninh occupied by B Btry, 2/35th Arty (155 SP) and B Btry, 2/32 Arty (8 in. and 175 mm) that provided support for our operation and FSB Gold. After crossing the rivers, both task forces moved north on the west side of Soui Mat stream in column to ease passage through the dense trees with the 2/22 TF leading. We were looking for another crossing site to get on the east side of the Soui Mat as it generally ran to the northwest, away from FSB Gold. The lower end was very boggy and the AVLBs could not span this area after their initial employment. At the end of March 18, we had moved about 2,000 meters north, paralleling the Soui Mat without finding a suitable crossing site. The AVLBs used to cross the river and the lower part of Soui Mat were returned to their base as their size would pose many problems going through the heavy undergrowth in the jungle and there were no identifiable sites for their immediate use.

On March 19, we continued moving north parallel to the Soui Mat and again moved about 2,000 meters conducting operations in zone and seeking a crossing site to the east without success.

March 20th saw a continuation of the move north, approximately 2,000 meters, with some skirmishes, but no success with a crossing site. The recon platoon of the 2/22 Inf (M), which had been in the lead at this time, had stopped about 1,000 meters north

of our night laager and returned without finding a crossing on the Soui Mat. (Little did we know, but at that point the Soui Mat was a dry bed with firm, fairly level ground that could not be seen from the air and not readily identified on the ground due to the dense growth.) It was planned that after stand-to the next morning, to go east from where the recon element stopped the previous night and look for another crossing site. As the jungle was so dense we could not see the meandering of the stream nor any place to cross by following its path from the air.

When the attack on FSB Gold started on the morning of March 21, I established the order of march from the laager with TF 2/22 elements leading. They were to establish a trail from the recon platoon's northern penetration and go due east towards FSB Gold. In my command helicopter, I was able to orbit the lead vehicle and direct its travel through the least dense areas and shortest line (it was approximately 2,500 meters) to FSB Gold. All vehicles traveled in column, with the M113s widening the trail to facilitate the tanks' movement through the trees. At the same time we were moving east, the 2/12 Inf was recalled from an area northwest of FSB Gold where it had gone on an operation on March 20. On entering the clearing in the southwest corner of FSB Gold, the combined elements of 2/22 Inf (M) and 2/34 Armor TF moved in column in a counterclockwise direction around the base to secure the SW, SE & NE sectors with the 2/12 Inf the NW sector. Once the perimeter was closed and secured, close-in operations continued, to include the retrieval of the FAC team from the airplane, about 1,000 meters south of FSB Gold, by the 2/22 Inf (M) recon platoon.

Many people have written about this operation, and there have been many variations to sort out. I hope that my comments above will aid in visualizing the operation from my viewpoint. There were many problems using tanks in the heavy jungle, as stated by 1LT Danny Hollister in the article. It was bad enough for the M113s, but the terrain dictated where you could and could not go with heavy armored vehicles vs. the M113s.

COL RALPH W. JULIAN (Ret.)
Highlands Ranch, Colo.

More Detail Added By Another Suoi Tre Leader

Dear Sir:

As an author of an advanced course monograph on the battle of Suoi Tre and a platoon leader in A Company, 2-34 Armor (my platoon was OPCON to 2-22 INF) during the fight, I want to say that First Sergeant Christopher P. Worick has done a superb job on his account of the battle. I would add that the commander of the 2nd Bn, 77th Arty was LTC John W. Vessey, who distinguished himself in the four-hour battle.

In 1970, on my second tour, I flew over Suoi Tre. The rectangle where we buried the 647 Viet Cong could be clearly seen at 1,000 feet. The weather was clear with no clouds in the sky, unlike that day in March.

COLONEL A. J. FERREA
U.S. Army, Retired
via email

Clarifying British and Canadian Use Of Converted Armor as APCs

Dear Sir:

I just got the July-August *ARMOR*, a good issue with a wide range of articles. Something to please everyone, if that is ever possible.

One small point caught my eye. In CPT Leaf's article on "MOUT and the 1982 Lebanon Campaign," his note 14, describing the use of armored self-propelled gun carriers for troop transport in British service in Normandy, ends with the sentence, "The idea did not take hold, due mainly to a lack of desire by the artillery to ferry troops around." This may seem strange to some readers, and I hope the following will clear the matter up.

The vehicles used were at one time SP guns, in fact the U.S. M7 105mm HMC, known as "Priests" in British service. These were based on the M3-series medium tank, with the fighting compartment replaced with an open-topped, protected box with the standard M2A1 105mm howitzer mounted to fire with limited traverse through the front plate. First used at El Alamein in 1942, they equipped several British and Canadian artillery units in the assault waves on D Day, firing from landing craft during the landing approaches and then employed as mobile artillery. As the 105mm was not a standard caliber in Commonwealth service, their standard towed and SP field gun being the 25pdr, the vehicles were soon taken out of service. For use as troop carriers, Canadian mechanics removed the guns and plated over the aperture as a quick-fix measure, the conversion being designed to be reversible. Used during the Normandy bridgehead Operation TOTALISE, these vehicles, dubbed "Unfrocked Priests" but commonly known as "Kangaroos," were thought to have been sufficiently successful to lead to more permanent employment.

What resulted was another Canadian effort, but more so. The carrier vehicle used was the Canadian Ram, a medium tank — a "Cruiser" in Commonwealth parlance — with the turret removed. The Ram was also derived from the U.S. M3 series, but unlike that vehicle's trademark side-mounted 75mm main gun and small gun in the turret, the Ram was in many ways like the M4 Sherman in that it was a conventional design. Regarded in mid-1944 as obsolescent as a gun tank due to its small, 57mm 6pdr gun, and superseded in Canadian armored units by

Shermans, there were enough in England for conversions to be made, and a new unit, 1st Canadian Armoured Carrier Regiment, was formed to crew them. After more successful use, a British unit — 49th Armoured Personnel Carrier Regiment — was formed from 49th Royal Tank Regiment. Both units were part of the British 79th Armoured Division, the home formation for specialist armor such as flail mine clearers, armored engineer vehicles, and flame throwers.

In Italy, the same idea was also employed in the later stages of the campaign using converted Priests and war-wary Sherman gun tanks with guns or turrets respectively removed. Postwar, the British army continued to use Ram Kangaroos for some years, while the Canadians went on to convert some of the late-model Sherman M4A2 tanks they purchased from the USA.

An account of the wartime Canadian unit, written and published by a veteran of the unit, "The Canadian Kangaroos in World War II — The Story of 1st Canadian Armoured Carrier Regiment, Canada's Foreign-born Secret Regiment" by Kenneth R Ramsden, was reviewed by this author for *ARMOR* in the March-April 1999 issue. An historical account of the unit and modeling details also appear in the British magazine *MILITARY MODELLING*, Vol. 30, No. 8, July-August 2000. Online, accounts can be seen linked from the "Maple Leaf Up" site <http://www.mapleleafup.org> and "Canadian Tracks" <http://www.magma.ca/~tracks/>.

I hope this will interest *ARMOR* readers and add a little more to the varied history of armor.

PETER BROWN
Poole, Dorset

Swallowing a Bitter Pill: Armor Must Lighten Up

Dear Sir:

In response to the letter "Armored Cars Squander Research Money" in the July-August issue, there is a problem. The Armor community must accept and swallow a bitter pill. The M1A1/A2 Abrams and the M2/3 Bradley vehicles are the weapons of choice in a major conflict should U.S. forces fight another heavy force, but they will not be the weapons used to fight small regional conflicts. These vehicles are, as stated, main battle vehicles. Not since Desert Storm has the United States been put up against a force that has massed armor capabilities. Nor have we been called on against a force that outnumbered us 15 or 20 to one, vehicle to vehicle.

Look at the last 20 years. Where have we deployed? Grenada, Panama, Somalia, Haiti, Bosnia and Kosovo. Our heavy forces were only deployed to two of these small conflicts and that was after several months of prepar-

ing for transportation. For the most part, the Abrams and Bradley vehicles cannot operate in Third World countries due in part to inadequate roads, bridges, and railroads. Therefore, we need a light force that can be deployed by air and at a moment's notice. This force must be able to defend itself and our interests until — if needed — our heavy forces can arrive.

As stated in his letter, LTC Kojro is concerned about crew survivability. The U.S. did not field a crew-survivable tank until the M1 was developed. The Armor force that crusaded through Europe in WWII did not fight in crew-survivable tanks, let alone the fact that they were out-gunned, out-armored, and thin-skinned. The M48- and M60-series tanks were not crew-survivable, with exposed hydraulic lines and open ammunition storage. The M1 *is* crew-survivable and that is the main reason it is now too heavy for quick deployment. Why is the M1 70 tons of rolling steel? So that it can survive heavy tank-to-tank fighting with an enemy that has greater massed armor. Is crew survivability a risk we can afford? As bad as it sounds, YES! Is it something we have done before? YES.

Before the letters start to pour in, let me explain. Will this light force be facing a massed armor enemy? NO. The light force will not be designed to go against an enemy with a heavy tank capability. What can light forces be expected to go up against? Some of these countries have had some armor capabilities, but not all. There has been plenty of light armor and regular military vehicles, but there is a good chance [the enemy] will be militia in pick-up trucks with 20mm cannons mounted in the bed.

So, what are the light forces going to be defending themselves against? RPGs, mortars, mines, 20 and 30mm cannon, and maybe the occasional T-54/55 or T-62. Can the LAV and HMMWV survive engagements with the above mentioned? If so, then that is what we are looking for. What about firepower? If you look in the *Janes* book on armor vehicles, you will see many types of vehicles with many different firepower capabilities. The LAV has several, and several countries, including some of our Allies, field many variations.

The Army shouldn't have to spend money on research and development for light force vehicles when this has already been done by our allies. The Army should explore upgrades or improvements to our current fleet and the existing available light vehicles used by others around the world. Have we exhausted the realm of weapons that can be transported on the HMMWV? What about the punch a Javelin team can add to a light force? Is a sabot-capable 90mm gun available for the LAV? These are the kinds of questions that should be explored.

I think the Armor/Cavalry community must accept the fact that we may not be called

upon for every small conflict occurring in a Third World country, but we must be prepared for the next major conflict that breaks out. The light force will be the one that must fit its vehicles and crews into C-130 aircraft, fly in, close with and destroy the enemy, whenever and wherever it may be.

KARLEN P. MORRIS
SSG, 2/123 AR
KYARNG

Kudos, and Comments On Fort Knox's New MOUT City

Dear Sir:

I am consistently impressed with *ARMOR* Magazine. Please pass to your staff the great job they do. You guys bring more meaningful "stuff" to the field than any other pub. I appreciate the way you always include historical vignettes to reinforce learning points, the way you allow even the most junior Armor soldier to sound off in letters to the editor, the way you present tactical TTPs that will, I assure you, one day save lives. The highlight of Gen. Starry, and the article about armor defending the firebase, were super (May-June 2000). Seems like the rest of the Army wants to dump lessons learned from Vietnam. I'm glad you continue to highlight them.

One minor thing: In the May-June 2000 issue, you show a pic of the MOUT city at Knox. Whoever designed it did a super job, but I've yet to go to a European or Asian city that allowed such easy trafficability for armor. Suggest they add on someday, with a cluster of buildings that replicate such tight conditions.

Keep up the excellent work!

GEORGE W. WHELOCK
MAJ, Infantry
Battalion Commander, Army ROTC
Michigan Technological University

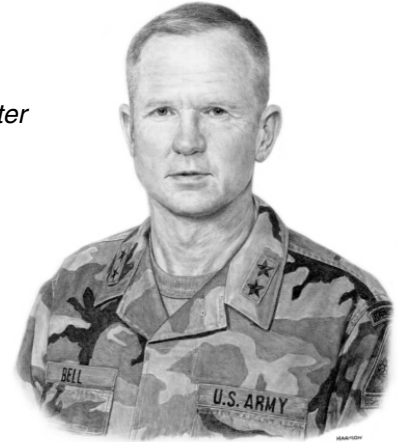
Book Review Was a Rare Critique Of a Sensitive Personnel Issue

Dear Sir:

I was surprised, but interested, to read the review of Stephanie Gutmann's book about women in the military. Surprised, as I believe there is a concentrated effort on the part of top generals to suppress any criticism of the feminization of the U.S. Army. I am still waiting for any top flag officer to tell the truth about what this is doing to morale, standards, discipline, and combat readiness. I have waited in vain to read a factual refutation with hard, pertinent evidence by any flag officer of Mitchell's book, *Women in the Military: Flirting With Disaster*. It is this refusal

Continued on Page 55

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



A Chief of Armor Update: The Combat Armor Badge

In this update, I'd like to address the potential for establishing a Combat Armor Badge. During General Shinseki's Armor Conference briefing, one of the great scout NCOs here at the Armor Center asked him when he, the CSA, was going to approve a Combat Armor Badge. Up front, this was a valid question from an Armor SFC who looks at his Infantry brethren and sees a Combat Infantry Badge and wonders why he too didn't receive a recognition badge for his service in Desert Storm. As you may know, this issue has come up from time to time over the years. There is no single best answer and all sides have sound, defensible arguments. On the surface, the establishment of a CAB would seem to have great value to our force, and would certainly recognize the Armor warriors who have served with distinction in combat when our nation called. However, upon further consideration and as Chief of Armor, I cannot support the establishment of a Combat Armor Badge. Here's why.

There are two overriding arguments that tell me the CAB is not right for our force. First is the potentially divisive nature of such an award, and second is its impact on the overall Army. Let me discuss each of these points.

In my view, the establishment of the CAB could be divisive in the Armor force and create an impression and culture of "haves and have nots." We routinely call on our great Armor and Cavalry warriors to perform a variety of

tough, challenging, full spectrum missions. These range from lethal direct fire combat, to peace enforcement, to peacekeeping, to presence, to recruiting, training, and preparing future warriors for their place in the force. The reality is that all Armor warriors stand ready to serve, and each serves as his Nation calls. Following Desert Storm, we all looked each other in the eye and reflected on the great training and mission readiness of the force. We stood by the principle that our entire Armor force was trained and ready to win the first battle of the next war, and the Desert Storm force did just that. We recognized that those who were not called forward were also trained and ready and would have served with distinction had their units been sent into the combat zone. We all vowed not to penalize those who did not serve in that war — just because they were not called on. I stand by that promise today — not just regarding the Desert Storm force, but regarding the full range of Armor assignments.

I believe that soldiers should stand out and be recognized for their selfless service and performance, not just for the location of their service. Our Army recognizes conduct in combat with a range of appropriate and time-honored medals for valor. We recognize participation in a designated combat operation by authorizing every participant to wear his or her unit's patch on the right shoulder. Should we authorize a CAB for service with a unit in combat, while at the same time minimizing the role of

a cavalry scout in Kosovo, an armor crewman in Bosnia or Korea, a drill sergeant at Fort Knox, or an AC/RC NCO at Fort McCoy, Wisconsin, because that is where the Army asked them to contribute to the Nation's national security effort? I for one don't think we should separate the two with a badge, a badge that would address service only, and not necessarily valor or courage in combat. It would create the haves and have nots by inspection of the BDU uniform only. I believe deeply that we should separate the haves from the have nots by reviewing their performance in whatever job the Army sends them to do — not by just inspecting their BDUs.

The second reason I can't champion a CAB is the impact on the Army overall. I don't think the proposal would promote unit cohesion or unity of the combined arms team. Our goal is to forge a cohesive combat team that fights and wins collectively. The CAB proposal would contribute to overriding unit cohesion with personal attributes, and tend to fragment the "have" Armor soldiers from the quality combat support personnel who fight alongside them in war. When we put a recon platoon on the ground in a combat zone, do we recognize the 19D scout with a CAB, then disregard the contribution of the 97B counter-intelligence soldier at his side who is assigned to that same scout squad by TO&E?

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Branch-Qualifying Time Requirement Provides More Opportunities for Armor NCOs

Time and time again, I am asked about the 18-month requirement for certification of position as section sergeant or tank commander, platoon sergeant, and first sergeant. There are many who ask, why do we have the time requirement? Is it really such a big deal if I do not serve the 18 months before I do something else? Some others say it is too short a time for a leader to truly become proficient in his job level; they say leaders should perform their duties longer in these leadership positions. Still others ask about the challenges of getting into branch-qualifying positions, compared to TDA positions that are vital to our Army. Whichever side you're on, the fact is that we will continue to have such a requirement in the Armor Force.

Each promotion board gets some guidance, sent to the president of the board, for selecting the best Armor NCOs for promotion. This board guidance is always available for anyone to review by going to the Fort Knox Home Page. Board guidance always states that an NCO who has served 18 months in the leadership branch-qualifying position at current grade **and** has served in a leadership position of the next higher grade is regarded as *Best Qualified*. An NCO who has served at least 18 months in the leadership branch-qualifying position of current

grade is *Qualified*, and an NCO who has **not** met the 18-month time requirement in a leadership branch-qualified position at the current grade level is *Least Qualified*. So, it is definitely important that NCOs seek and fulfill the 18-month requirement of leadership branch-qualifying positions.

The 18-month time period was selected because this appeared to be the normal cycle of time for a unit to go through several key events that are critical in the development of leaders. Some of these events are: FTX, gunnery, CI, monthly counseling of soldiers, mentoring soldiers for promotion and ARTEP, to name a few. I do admit that there are units who may do the training events faster or slower than 18 months. However, in most cases, 18 months is the minimal time a leader will get to see everything one time and even that may not be enough to make that NCO proficient in leading with enough technical and tactical expertise at that current grade level. Senior leadership must counsel the NCO and tell them how they are doing, or not doing, as it pertains to branch qualification. It is key for soldiers to receive counseling if they are to be successful in promotion, at all levels.

The Army and the Armor Force is different then it was several years ago, and

it continues to change to meet the needs of an ever-changing world environment. I have heard it said that soldiers are being asked to do more then they used to have to do. That is true, partly because the equipment allows the soldier to do more, and also because tactical situations require it. But just because, 10 or 15 years ago, a platoon sergeant may have been in position for 6 to 8 years does not mean that we need to do this today. We must constantly measure what we need of our leaders and assess their ability to meet that need. It cannot be argued that the more times someone has to do a certain task, the better they normally become at the task. Once a leader has proven expertise of a certain task at his current job level, senior leaders must note this and assist the NCO in mastering the other skills that are required of him at this grade. Only after he has mastered all the tasks required of a qualified leader in his current grade should leaders allow the NCO to progress onto the next level of leadership responsibility.

Having NCOs perform duties in TDA assignments is crucial to the success of our Army. There are many positions that fall into this category, such as AC/RC duty, drill sergeant duty, recruiter

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Tanks and the Korean War: A Case Study in Unpreparedness

by George F. Hofmann, Ph.D., University of Cincinnati

"I believe we need to read the lessons closely lest we repeat, at inestimable cost, the mistakes for which we paid so dear a price."

General Matthew B. Ridgway
The Korean War (1967)

As the U.S. Army went to war in Korea in June 1950, it once again found itself unprepared to fight and win the first and succeeding battles.¹ In order to understand why the Army was unprepared, we must examine the postwar development of doctrine regarding mechanized warfare with tanks as the main maneuver element.

On the eve of the Korean War, the nation's defense establishment had set aside much of what had been learned about the conventional combined arms armor doctrine so successfully demonstrated in Western Europe in World War II, and instead had begun to depend on nuclear weapons delivered by air power. As this was happening, the Army was digesting the war's lessons, attempting significant changes in organizations, weapons systems development, and doctrine, based on the success of the combined arms approach developed during the war.

It was quite evident that the tank had revolutionized battlefield dynamics. The armored force that swept across Europe had learned some important lessons, chiefly that it was essential for ground forces and tactical air to fight in combination, and that tanks could not operate independently in battle. Another lesson was that it was important to have tank units organic to infantry divisions, and consequently, a tank battalion was made organic to each infantry division to assist in the assault.² Armor was expected to exploit the breakthrough, then strike out to pursue the enemy. In short, the Army believed that the combined arms team, built around the tank, could make operational level exploitation possible.

One doctrinal milestone emerged in January 1946, with the "Report of the



Although the U.S. had developed more modern tanks, the WWII-era Sherman M4A3E8s carried the burden of much of the fighting early in the Korean War.

War Department Equipment Board," the Stilwell Board, which was named after its president, the respected General Joseph W. Stilwell. Based on immediate postwar reports from Europe on tactical employment of armored and infantry divisions, one of its many recommendations called for establishment of a combined arms force to conduct extended service tests of new weapons and equipment. The board suggested that this proposed combined arms force formulate a doctrine for its employment, specifically aimed at providing a ready force quickly available for any military contingency.

The report proposed three types of tanks: a light tank for reconnaissance and security; a medium tank capable of assault action, exploitation, and pursuit; and a heavy tank capable of assault action and breakthrough. The board also recognized the importance of developing components specifically for tanks rather than relying, as in the past, on standard automotive components. It was now accepted that the tank was a special vehicle. Finally, the board based its recommendations on the idea that the next war would again be total, with the use of air power and atomic weapons, and that victory could only be

achieved by occupying the enemy's territory.³

Based on another recommendation of the Stilwell Board, the commander of the Army Ground Forces, General Jacob L. Devers, disbanded the tank destroyer branch. Tank destroyer doctrine was no more than an early World War II defensive response to the threat of mechanized warfare and its main ground maneuver element, the tank. But as the war progressed, tanks improved and accounted for most of the tank-on-tank combat. By the end of the war, the M26 Pershing tank offered better armor protection than the open-turreted tank destroyers and mounted a 90mm gun as good or better than the guns on the TDs.⁴

As the Army was steeply down-sizing, it would be difficult, if not impossible, to implement the Stilwell Board's recommendations. The cuts were so drastic that during his tour as Army Chief of Staff, between November 1945 and February 1948, General of the Army Dwight D. Eisenhower remarked that implementing the rapid demobilization of the wartime army was more unpleasant than being head of the occupation forces in Germany. His tenure as Chief

of Staff, Eisenhower noted, was full of frustrations. The wartime Army was falling apart, rather than demobilizing, while he was struggling with Congress over budgetary problems and the public outcry to “bring the boys home.” Adding to this dilemma, troop discontent over inequities in demobilization almost turned into a mutiny. Eisenhower struggled with the need to redeploy the Army for occupation duties in Germany, Austria, Japan, and Korea, and there was an ongoing debate over the unification of the military services.⁵

Speaking on national security at the Nebraska Fair in Lincoln on August 31, 1947, General Devers observed that during the two years after the end of hostilities in Europe and the Pacific, the United States demobilized the Army and Navy, “until it became evident that, with every reduction in the power at our disposal, there was a corresponding deterioration in the international situation.”⁶ Even before the war had ended in Europe, the Secretary of State advised the War Department of serious deterioration of relations with the Soviet Union. A year later, Secretary of State James Byrnes had painted a very pessimistic picture regarding Soviet aggressive tendencies in Eastern Europe.⁷ These developments made the international situation more unstable, yet the President was implementing a defense policy based on deep cuts in conventional military expenditures in favor of reliance on nuclear power delivered by air.

General Devers reacted with criticism of the nation’s policy makers. He claimed they had missed opportunities to educate the public about world problems. Regarding the future Army, he said he was disappointed that Congress was resisting the President’s and War Department’s plan for universal military training, which was necessary to fill the ranks of the National Guard and Organized Reserves. Devers argued that since the bulk of the Regular Army was on occupation duty and garrisoning United States territories, there would be a major manpower problem if a war occurred.⁸ Two years later, the Army would be stretched even further by the need to assign ground troops to the North Atlantic Treaty Organization, which — along with the Truman Doctrine and Marshall Plan — were part of the nation’s new policy of containing Soviet expansionism.

When the economy-minded Republicans gained control of both houses in Congress in the 1946 elections, the

“The Army suffered the most under the fiscal restraints of the legislative branch, having its appropriations, especially for research and development, cut each year until the war broke out in Korea....”

Army’s future became even more vague. Senator Robert A. Taft, an influential Republican isolationist, challenged the country’s postwar role in internationalism, and was a proponent of limited government. The Ohio senator was not enthusiastic about committing U.S. ground forces in Europe. Instead he supported the Navy and a policy of reliance on air power and nuclear weapons for national defense.⁹

Adding to the Army’s predicament was the influence of atomic bomb scientist and author Vannevar Bush, who was head of the Office of Scientific Research and Development during World War II, and beginning in September 1947, the director of the Joint Research and Development Board, created to resolve technological differences between the several departments and agencies in the military establishment. Earlier he had suggested to Congress that the military limit its work to improvements in existing equipment rather than perusing technological development. Shortly before the war started in Korea, Bush wrote the Army Chief of Staff, General Omar N. Bradley, that the day of the tank’s dominance was fading. He argued that for the cost of one tank, 100 antitank guns could be built, using new ammunition to fight and hold defensive lines in Europe against a preponderance of Soviet tanks.¹⁰

Throughout this period Congress tenaciously held to its illusion of insular security despite growing Soviet intransigence and aggressiveness. By controlling the purse, Congress was able to influence a national strategic policy, limiting military force levels and weapon systems development programs. The Army suffered the most under the fiscal restraints of the legislative branch, having its appropriations, especially for research and development, cut each year until the war broke out in Korea. Before he left office in February 1948, General Eisenhower warned that the unbalanced budget situation had rendered the Army increasingly unable to mobilize in a national emergency. The

outgoing Army Chief of Staff stated that the Army had in essence purchased no new equipment, including tanks, since World War II. Therefore the Army, he warned, was in no situation to train and arm its troops adequately to meet demands of emerging international threats. Consequently, the ground forces reported state of readiness to deal with contingencies and defensive plans were nothing but “mere scraps of paper,” Eisenhower concluded.¹¹

Military manpower continued to decline, not for a lack of volunteers, but due to Army budget cuts. Despite an increasingly turbulent new world order, the home front was more preoccupied with its move to suburbia, concern over rising prices and inflation, labor unrest, a crisis in education, housing shortages, and tax disputes. Meanwhile, the National Defense Act of 1947 had separated the Air Force from the Army, giving it equal status with the Army and Navy. The new Defense Department establishment, under a civilian head with cabinet status, was intended to improve wartime operations of the services, but instead politicized the process, making it difficult to establish centralized planning due to multiservice bickering and squabbling amongst the service chiefs. This increased the competition for military technology funding during a period of budget constraints.

With the technologically driven air power proponents striving to achieve a greater nuclear delivery capability and the Navy, traditionally the most expensive of the military services, fighting for its share, there were virtually no funds for armor research and development. This weakened the Army’s political situation, depriving the ground forces of the means to develop a proper relationship between the doctrine and technology required for mechanized warfighting as envisioned by the Stowell Board.

The Truman Administration, continually driven by domestic policies that focused more on the postwar economy and social programs, remained adamant about defense cuts. In 1948, the Army had to impose an 80 percent reduction in equipment requirements, thus deferring any equipment modernization. In 1948, when the Joint Chiefs of Staff submitted a \$30 billion defense budget based on their perceptions of national security needs, Truman capped their budget at the \$14.4 billion set in 1947 and progressively reduced in succeeding fiscal years until January 1950,

when it was reduced again to \$13.5 billion. Congress also reduced the authorized Army end-strength from 677,000 to 630,000. When North Korea invaded South Korea, the U.S. Army's actual strength was only about 591,000 men. And only 6,000 serviceable tanks remained in 1950 of the more than 28,000 tanks the country had at the end of World War II.¹²

Although President Truman blamed rapid post-World War II demobilization of America's mighty military force on the people, the press, and Congress, he also went to great lengths to hold down defense spending.¹³ Truman's ambitious Secretary of Defense, Louis Johnson, whose economy drive on the eve of the Korean War again fell heavily on the Army, best illustrated this. Johnson believed that the best national defense policy rested on nuclear air power. Unlike Johnson, Secretary of State Dean Acheson favored a more flexible policy based on deployable military power that would enhance American diplomacy. This policy found support in a recommendation made shortly before the invasion of South Korea in a secret National Security Council study (NSC-68), which called for a stronger ground force to deal with increasing challenges caused by the spread of communism worldwide.¹⁴

Secretary Acheson, however, defined the country's strategic defensive perimeter along a line that included Japan and Taiwan but did not include Korea, a country where the Joint Chiefs of Staff had earlier advised the President that the United States had little strategic interest. They argued that military retrenchment and budget cuts forced them to take U.S. military forces out of Korea.¹⁵ At the same time, there was disagreement between the Central Intelligence Agency and Army Intelligence over the possible outcome. The CIA advised that withdrawal of U.S. ground troops from South Korea in the spring of 1949 would in time be followed by an invasion from the North. The Army's Intelligence Division disagreed, claiming troop withdrawal would not encourage a North Korean move.¹⁶

Meanwhile, early in 1949, an advisory panel on armor reported that the U.S. Army had no tanks in production or in development capable of defeating the types possessed by the country's potential enemies. The panel considered this situation critical. Unless the Army's tank development situation was improved, the panel reported, the United States would not have enough tanks to

support a major ground war for at least two and a half years after the beginning of hostilities. One solution suggested was to take advantage of America's great industrial capabilities and the mechanical aptitudes of its people.¹⁷

A 1949 field manual emphasized the importance of the offensive role of armor, noting that the faster armor moves and the quicker it accomplishes its offensive mission of penetration and envelopment, the fewer the losses and more effective the gains. Exploitation was considered a continuation of penetration and envelopment. Tankers were expected to plan boldly and execute their missions with aggressiveness and violence, employing firepower, mobility, and speed.¹⁸

In March 1950, the Hodge Report — named after Lieutenant General John R. Hodge, the post-World War II Army corps commander in Korea — stated that armor was more effective when employed as part of the combined arms team of tank, infantry, artillery, combat engineers, and tactical air power. Armor's mission with the combined arms team was destruction of enemy forces with firepower, mobility, and shock action. The report added that attacking towards deep objectives in pursuit and exploitation over considerable distances was the role for armor at the operational level. In the design of tanks, the report stated, firepower, maneuverability, and mobility were more important than armor protection, although armor remained important. Like the Stilwell Board, it recommended tanks be organic to infantry regiments and divisions, and that three types of functional tanks be developed. Disheartened, the Hodge Report noted that Army research and development had been curtailed and would likely be further reduced.¹⁹

By 1950, Army doctrine had been revised in many ways; however, it was basically a refinement of World War II experience. It was Eurocentric, designed to fight a total war, rather than contingency operations in present and future less-than-total war situations around the world.²⁰ Congressional and White House actions had reduced nine of 10 Army divisions into ineffective skeletons, impacting training. This was especially true of the four occupation divisions stationed in Japan. That congested country and its road conditions did not permit extensive training exercises, especially for medium and heavy tanks. Moreover, because of the military austerity program, these divisions

were deficient in authorized tank strength. Rather than having a standard complement of one heavy tank battalion of M26s and three regimental medium tank companies of M4s, each division had only one company of M24 Chaffee light tanks, no match for the Soviet-built T34/85 tanks that the North Koreans Peoples' Army used to spearhead their invasion of South Korea.

On the eve of the Korean War, the Army had approximately 3,400 M24 light tanks in the inventory, most of them unserviceable. In addition, there were available approximately 3,200 M4A3E8 Sherman medium tanks of World War II vintage, of which only a few more than half were serviceable.²¹ The M4 mediums were the workhorse of U.S. ground troops during World War II. They were not tactically capable of head-to-head engagement with German tanks. Their battlefield success was due more to superior numbers and the ability of U.S. tankers to maneuver to a position where a penetrating round could find a weak spot.²² To engage superior German tanks, the Army introduced, late in the war, the heavier armed and armored M26 Pershing. However, the first three M26s that were rushed to Korea from the Tokyo Ordnance Depot had chronic problems, especially overheating engines and defective fan belts.²³

Also introduced to Korea was the M46 Patton. Fielded in 1949, the M46 was an M26 upgraded in engine reliability and cooling. Accordingly, tankers went to war in Korea with equipment mostly left over from World War II. In addition, many tankers were ill-trained and ill-prepared, receiving equipment just days before engaging the T34/85s.²⁴

In the beginning, the Korean War was a war of movement. U.S. tank units were assigned to various infantry divisions, regimental combat teams, and task forces for mobile fire support and antitank capabilities. No large armor units — regiments, brigades or divisions — saw service in Korea. After the counter-invasion by the Chinese Communist forces and what was left of the North Korean People's Army, the conflict became a defensive war of attrition and increased firepower to support infantry forces. Despite mountainous terrain and restricted trafficability, tanks proved to be potent adjuncts in support of infantry. Often they were used for indirect fire missions or deployed in fixed defensive positions. Though most armor action was infan-



At top of page, M46 tanks of the 64th Tank Battalion undergo final inspection before an operation supporting the 3rd ID in July, 1951. At left, an M46 rolls down one of country's few high-speed roads. The M-46 at lower right slowly moves into a village. The knocked-out North Korean vehicle at center, above, is a 76mm self-propelled field gun.

try- and artillery-driven, Korea demonstrated the value of tanks as infantry-accompanying weapons, and on occasion, achieved spectacular results in executing fairly deep mechanized task force operations despite mountainous terrain and trafficability restrictions.²⁵

A 1954 Johns Hopkins study, "Tank-vs-Tank Combat in Korea," recorded that U.S. tanks were approximately three times as effective as enemy tanks. It noted that American tanks destroyed about 25 percent of the enemy tank force, largely due to higher first-round engagements and hits.²⁶ As a result of early experiences in Korea, a 1951 policy conference on armor revived the Stilwell Board's recommendations for three types of functional tanks: a light gun tank distinguished by its mobility; a medium tank characterized by its ability to sustain itself in all types of combat action; and a heavy tank to defeat any enemy on the battlefield.²⁷ Conversely, the British, who considered the Patton tank "all too pansy," had indicated that, unlike the U.S. Army, one all-purpose tank, like their Centurion, was more suitable for armor operations.²⁸

In spite of various armor policy recommendations following the Stilwell Board Report, battlefield dynamics in a

limited war changed the relationship between maneuver and firepower, emphasizing increased use of air power and artillery.

At the 1954 Armor Conference, the question of armor mobility was positioned within the national strategy of nuclear air power. It rationalized that mobility and flexibility would become more decisive on a nuclear battlefield. The conference concluded that armor was more capable of attaining relatively superior mobility that could provide a decisive advantage in a European-style battle. The conference accepted the concept of firepower and attrition but suggested it be integrated with the freedom of action that armor provided.²⁹ Naturally, mobility depended upon equipment characteristics, which required a trade-off between mobility and survivability. Summarizing, the conference noted that firepower was the decisive factor, and that armor doctrine be based on the fundamental concept that power coupled with an unexcelled ability to maneuver firepower at the decisive time to the decisive place. Yet for the decades following the Korean War, firepower systems and attrition warfare doctrine dominated. This doctrine finally gave way to the visionary AirLand Battle doctrine

for warfighting at the operational level that characterized Allied operations during the Gulf War.³⁰

Concluding, there are a number of historical observations to consider. First are the country's political objectives. Until the war in Korea, Congress and the President were more prone to political and economic containment of the Soviet Union and collective security through the United Nations rather than promoting a combat-ready ground force to deal with contingencies, as suggested by the Stilwell board.

This situation again demonstrated that the country's leadership failed to adopt a national defense policy that took advantage of technological changes brought about as a result of World War II. Congress and the President also lacked the vision to fully understand the importance of the conventional component of a national military policy. The outcome was that traditional military heritage once again came in conflict with postwar domestic and political demands, causing a serious gap between foreign policy and a suitable military policy.

The second observation deals with the issue of military strategy, which is how to win the next war. The post-World



The Sherman “Easy-8” was outclassed in tank-to-tank combat by the early ’50s, but was still formidable in its main Korean War role, supporting infantry. This scene shows an M4 accompanying U.S. and Korean infantrymen through a rubble-strewn street.

War II military austerity invoked by the White House and Congress had a ripple effect, stifling Army research and development necessary for innovation with a mobile strike force trained and equipped to fight and win the first and succeeding battles.

The Army’s post-war doctrine on how to organize and fight its next war was not in agreement with required modern equipment assets necessary to execute its mission. Consequently, the strategic, operational, and tactical links for winning the first battle never materialized. This was due to a national strategy that did not take into consideration the relationship between threats and the need for technological advances. As a result, the Army had a force structure and equipment that did not fit its future warfighting doctrine that became outmoded in spite of the Stilwell Board’s recommendations. Instead the national defense strategy of the country relied on nuclear weapons and intercontinental airpower capabilities and the exercise of coercion called deterrence, America’s Maginot Line.

Third, when the U.S. Army entered the Korean War, an innovative tank program and a visionary mobile combined arms doctrine — suggested by the Stilwell Board and endorsed by the Hodge Report — were all but forgotten.

As revolutionary as the tank was in World War II, its future full potential was not to be realized with a ground force whose mission began to change as a result of America’s expanding international commitments to contain communism. As a result of the Army’s lack of preparedness, North Korean forces, led by their T-34/85s, pushed the allies back to the Pusan Perimeter, a tiny sliver of the peninsula, before it could accumulate sufficient strength to stop the North Koreans and launch a counteroffensive.

The neglect of armor research and development and a makeshift organization led to many frustrations for tankers in Korea, who fought and died there while employing, in most cases, worn-out, World War II equipment. This

experience was a clear example of the importance of readiness and the need to modernize organization, training, and equipment to deal with the ever-changing threats and technical advances of warfighting.

Unfortunately, funds that did trickle down for armor research and development degraded the health of the armor force, a legacy that continued long after the “Forgotten War” in spite of the changes in warfighting from a World War II concept of total war to the dynamics of a limited war.

This paper was presented as part of a panel session entitled, “The Korean War ‘Tank Crisis’ of 1950,” chaired by BG Jack Mountcastle, USA (Ret.) at the Society for Military History annual meeting at the Marine Corps University. The commentator at the session was GEN Donn A. Starry. The author would like to express thanks to GEN Starry and Charles Lemons, Curator of the Patton Museum, for their assistance while he was researching the article.

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²⁸"Tanks: How Do They Rate?" 24 March 1952, *Newsweek*, pp. 30-1.

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The Army and Society: Some Perspectives for the 21st Century

by Colonel (Ret.) Michael D. Mahler

As our Army enters the 21st century, there appears to be a distinct sense of unease within its ranks. Recent surveys depict a corps of officers and noncommissioned officers who have low morale, who do not believe that their units are well prepared, and who do not intend to stay in the Army until retirement — in fact, the survey found a third of the officers and noncommissioned officers intend to leave at the end of their current obligation. Added to that alarming report is a perception that the “warriors” are getting out first and that career success comes from avoiding risks in training, doctrine, and leadership.

As unsettling as this picture is, it might be well to put a little perspective on what we are reading and hearing in the hope that we can better find our way through this seeming morass and recover some of our good feeling for a profession that our nation still needs — though sometimes it does seem that the nation doesn’t know it. If it is true that the Army is, in many ways, a reflection of the society from which it springs, it may be well to start by looking at some unsettling trends in that society.

A few years ago, a well-known management consulting firm did a very large national employee survey. The general trends were disquieting and may sound familiar. They found that company credibility was at a 10-year low, that manager/professional skepticism was up five percentage points, that “company” approval was down 20 percentage points, that less than 50 percent of management believed they were “in touch” with employees, and that advancement opportunities were perceived to not be there.

Much of this feeling probably resulted from the downsizing and reengineering that had been taking place. As good people were let go, remaining employees worried about their future. As organizations reduced size, the work burden grew greater for the remaining employees. As resources became more constrained, managers were pushed to

achieve the same or greater outputs with less. As outputs became more critical to survival of the organization, it became more demanding of its managers. And as managers became more pressured, they became insensitive to the needs of their subordinates.

In the midst of all this, the reduction in the middle-management ranks meant that promotions were hard to come by because there were not as many positions available. Eventually, the private sector came to understand that there is a limit to being lean and mean that is not reflected in the balance sheet alone. Many companies have been working at redressing the damage done in the years of self-inflicted reorganization and many of the gurus of that era are out of work, but the sense of betrayal lingers and employees remain skeptical.

Our Army has been through much the same thing over the last eight or nine years, though the downsizing resulted from directives and budget reductions. It should not, therefore, be surprising at this stage to find that the same reactions have set in among our officers and noncommissioned officers.

The recent Army survey found that the major issues motivating members to leave the service were family separation, pay, quality of life, and job satisfaction, though the order differed slightly between officers and noncommissioned officers. Compare this to that national survey of a few years ago where the top four reasons for leaving a company were advancement potential, boredom/more challenge, inept management, and pay. It takes very little imagination to see the parallels, nor to understand the terrible price an organization pays when it reduces size beyond the point where responsibilities can reasonably be fulfilled. If you take into consideration that our Army members have always had more family separation than any private-sector employee, have always had less control over their earning power, and have always had much less ability to do something about their quality of life, it is no

wonder that there is a sense of unease in our ranks.

But maintaining an Army that is too small for its missions and not as well paid as the private sector of our society is not new. The 31 December 1899 *New York Times* carried a small article noting that the Democratic Senator from Missouri opposed a Republican plan to raise the regular army strength from 26,000 to 65,000 because, with some slight adjustments for seacoast fortifications, the 26,000 would be “all this country will need after the present conditions in the Philippines have been overcome.” And pay has always been an issue. In the late 1800s, the Congress simply did not appropriate *any* pay for the Army for a period of time. So, the Army has had similar issues with American society for at least a century, but the sense of unease that is with us today seems not to have been present in the past. What makes the difference?

One difference now is that the mission of the Army is more ambiguous than ever before. That is partially due to the end of the Cold War, which was the last easily articulated threat to national security, and partially due to the number of administration-directed deployments whose relationship to core Army missions is not easily articulated. Fortunately and unfortunately, these deployments have not resulted in high costs in casualties or equipment — or at least not since Somalia. It is fortunate for the deployed Army members, but it is unfortunate because it enables the deployments to continue without much public notice or discussion. In the absence of full public discussion on the national security rationale for these deployments, it becomes very difficult to relate them to the Army’s traditional core missions.

In order to feel pride in performance, most Army members need to feel that they are doing something important that is related to what they have been trained to do and what they joined up for. While you can train them to do

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many different tasks, you can't legislate how they perceive the difference between the assigned task and what they signed up to do. For them to believe that an activity is worthwhile, they must see some significant mission-related reason for the family separation, high operational tempo, and general discomfort incurred. You cannot use the Army for what many perceive to be repetitive whimsical deployments, not clearly related to core missions, and expect the ranks to feel good about it.

The traditional senior leadership role of trying to rationalize the burden simply emphasizes the different perspectives under these circumstances and leads to the allegation that they are out of touch with the organization. No amount of thanks for a job well done, or preaching about the importance of a mission, will convince soldiers that they are involved in something significant if the issue is not generally accepted as one that they signed on to perform. Desert Storm felt significant; nothing since then has quite made the grade with soldiers despite all the talk. Desert Storm was about what armies do.

That doesn't mean that our Army has not turned in a fine performance in these nontraditional missions; it does mean, however, that it has been a fine performance that a majority may not believe they should be doing. Overcoming that is going to require some inspired leadership, not just talk about missions other than war. Unfortunately, the most difficult part of that inspired leadership may require doing the politically unpopular: educating society on the trade-offs involved in multiple doubtful deployments versus current resources so that all the costs of the choices are clear to both our civilian leadership and their constituents. The effort, alone, would dispel some current perceptions.

The problem of “warriors” leaving the Army is also not new. If you look at the “warriors” in the Civil War, you find that many of them had left the Army only to come back in when the conflict started. It is hard to be a “warrior”

when there is no need because “warriors” don't like to waste training time on activities they perceive to be marginal to their mission, and they don't take kindly to the kind of careerist who is willing to sacrifice risk-taking in training and thought in order to make it appear that all is well with the world during their “watch,” which is endemic among senior managers in the private sector of society as well.

If you look at one of the managerial-style constructs popular in society today — the one that uses quadrants labeled “analytical,” “driver,” “amiable,” and “expressive” — it appears that the Army has always wanted its small unit leaders to be “drivers” (high risk taker, results-oriented, task-oriented), but its senior leaders to be “analytical” (always wants more information, hates to be wrong). Extended periods of peace aggravate that divide because the “drivers” who want to realistically prepare for war and the “analytical” types want to be sure they don't make a mistake — and most peacetime goals will always appear to be artificial when compared to taking a hill. It is simply harder to quantify success in the military in peacetime, so careerists focus on “zero defects” instead of maximum effectiveness.

Warriors have always left the service during long periods of peace, and if they stayed, their advancement was slow. Many of our World War II leaders would have retired as colonels had it not been for that conflict. My generation of soldiers (after Korea and during the Cold War and Vietnam) were more fortunate than many because most of our senior leaders had made their reputations in World War II or Korea, when “warrior spirit” counted, and had that momentum to carry them up through the ranks in the ensuing periods of “peace” — though what with the Cold War and Vietnam, there was never quite the intolerance for these “drivers” that may be prevalent now.

The challenge then is to make room for the “warriors” when a careerist's instincts are to eliminate the risks of having such stormy petrels around to

explain. That takes a lot of security in who you are and where you're going — and a stronger interest in what is right for the organization than what is right for advancement in that organization, which are hard qualities to legislate given the human instinct for survival and the natural competitiveness of many Army members. We will also have to do better in this respect than our private sector counterparts, with whom being a “team player” has become the major qualification for success in big organizations.

There is an added dimension to this scenario that comes from our society's fascination with high technology and its current tendency to believe optimum effectiveness comes from functional specialization. Technology has provided the ability to retrieve and sort endless amounts of data, and the natural extension of that is that we sometimes have trouble differentiating between data and useful information. Simply because the capability exists, society seems to be impelled to use it. We must resist that societal trend because it may be fatal to Army operations. My memories of trying to move a tank company forward while buttoned up make me wonder how much digitization I could have digested — and reading about trying to do the same thing these days with “auto-masking” in effect makes me think that not much has changed.

Technology and functionality also tend to distort what is important and what is not. A recent article in *ARMY Magazine* lauded the advent of the new Strategic Plans and Policy specialty. While the new specialty appears to be simply a refinement of the old Operations, Plans, and Training specialty, the authors tried unsuccessfully to make the case that this new specialty would provide a unique advantage for the Army of the future. After a historical review of past great military strategists (which actually showed rather convincingly that the great strategists were really the result of personality and place rather than any training model or specialty track) the authors asserted

that the new specialty would release the selected officers “from the needless burden of becoming tactical and operational masters en route to becoming strategists.”

Apparently they saw nothing wrong in asserting that an officer could become a strategist without mastering the foundations — and neither did the readers. More than six months after the appearance of the assertion, I have read only one criticism — in another professional journal and from another retired officer. What’s wrong with this picture? Have we become so inured to unrealistic concepts that nobody objects to two academics demeaning the core skills of a successful Army leader? Does that mean that Courtney Massengale has become the hero of Myrer’s *Once an Eagle* to this new generation of readers? Or are our readers just too busy and too tired to care? Intellectual apathy is not normally the hallmark of a healthy organization in our society.

Finally, with regard to technology in all its wonder, it would be well to remember that it is a tool, albeit a very powerful tool, for humans. It is not a substitute for initiative or intelligence, and it requires a deal more sophistication to use it properly than most folks seem to realize. Take, for instance, the omnipresent e-mail. It is a quick and efficient means of communication, but is it effective or is it “efficiently deceptive”?

The recipient gets the message instantly, though the responsibility for getting the word out has subtly changed from the sender to the recipient who must open his e-mail — but the message no longer conveys the angry voice of a boss, the frustrated gesture of a subordinate, the compassionate look of a colleague, or the friendly pat of reassurance, all of which often deliver the message more effectively than the most eloquent e-mail. Senior leaders need to consider that aspect lest they inadvertently distance themselves even more from those they lead in ways they have never even thought about. And make no mistake: this issue is not, as I recently read, about learning to use new technology; it is about being sensitive to the effect of new technology. The private sector of society is just now starting to understand these complications, but we’re the ones whose business is supposed to be leadership.

Current high technology is the latest tool, but probably not the last new development. And even if it is, we are in a profession that may require us to at-

tempt what technology tells us will not work. A wise professor at the U.S. Military Academy once responded to a question about the utility of teaching literature to future Army officers by pointing out that the purpose was to develop their imagination and creativity so that they might be able to find a solution on some future battlefield when the computer — and everything rational — told them that they could not hold. After all, technology or not, smart munitions or not, isn’t that what our profession is about?

There is not much that we can do about decreasing budgets, frittering away scarce resources on doubtful missions, or reduced strengths, other than to make an honest case for what is right and what is needed in the appropriate public forum. There is much that we can do to avoid the pitfalls that the private sector of society has encountered in its dash to downsize and reengineer and employ technology. Technology was initially touted as being a way to reduce personnel needs, but it has never produced any real personnel savings. It has merely changed the skills needed without reducing the numbers. A case may be made for the private sector that the end result is improved output despite the absence of savings in personnel costs, but that would be a dangerous pattern for an army to try to replicate since its output is overwhelming force at the needed place at the needed time.

Society in general today is mesmerized by high technology and prosperity and early retirement with a minimum of effort. The temptation to clone an Army with those qualities is great, and the possibility of totally avoiding them really remote. It may be that it is a time to be reinforcing the tried and true Army leadership principles, while remaining cognizant of what is going on in society at large — and adopting only that which really fits those principles. Increasingly, that society is one that has no familiarity with the realities of Army service; that needs to be continuously educated in terms that they can understand about what we do and what our limits are. That does not mean, however, that we need to become like them in ways that may counter our effectiveness when it will be most needed. Reliance on technology and politically easy solutions may earn you stock options, but it may not make you successful on some future battlefield.

Finally, it is apparently not fun to be in the Army these days. That is what you read and what you hear. All of the

issues discussed to this point would make it reasonable to accept that perception as fact. I’m not sure that many of us would characterize our own periods of Army service as “fun,” but I am very sure that there were a lot of very satisfying high points along the way that seem to be missing today. And, I do think that there was more of a sense of making a real contribution to something really big in other years — a sense that your unit might be the only available force for your country at a critical moment in a critical place and that you had better be ready for the eventuality, no matter how remote it might appear.

One of my bosses in a pretty routine staff assignment once remarked that what kept his combat arms staff officers going was that they all had white horses tethered out in the hall in case the need arose for them to gallop off. As absurd as that may sound for a digitized army, maybe we need to make sure that there is still a place for those horses as we start the 21st century.

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Mobs, Refugees, and Armor: Tactics, Techniques, and Procedures

by Major Robert G. Ivy

Bosnia, August 1996. 1-4 Cavalry was operating in sector supporting various missions, including the occupation of platoon-sized observation posts, treaty verification, and security support for the International Criminal Tribunal for the Former Yugoslavia (ICTY). Mahala, a former Muslim village on the Serb side of the Inter-Entity Boundary Line (IEBL) had recently been reoccupied by Muslim refugees. These refugees, supported by the Muslim government, stood accused by the Serbs of carrying arms and endangering Serb civilians. A group of Serb policemen were dispatched to clear the town of the Muslims and were reported to the squadron headquarters by a patrol that supported the ICTY mission.

Squadron elements responded by sending a tank and Bradley scout section to Mahala to observe. Meanwhile, Serb police clashed with the Muslim refugees. Separating the two factions, the squadron guarded each until representatives from the two governments could be brought to Mahala to negotiate an end state. The Serb government responded by broadcasting on local radio stations that NATO had arrested the Serb police. Serb mobs appeared throughout the squadron sector shortly thereafter, blocking most of the key road intersections. The Serbs began transporting hundreds of people to an intersection close to Mahala. Soon, a massive Serbian mob moved toward Mahala to take control of the Serb policemen. The brigade commander, wanting to maintain control, instructed the squadron to stop the mob.

There have been several incidents similar to the one at Mahala. In most of these situations, U.S. armored forces were present in some form. Therefore, it is important for Armor leaders to understand that mob situations can be controlled.

For the purpose of this paper, a crowd is a large gathering of people that is not mobile and does not possess any kind of command and control. A mob also is made up of a large number of people, but a mob possesses command and control, is mobile, operates according

to a plan, and many times has communications contact with a higher level element. A crowd is usually a spontaneous reaction to an event, whereas a mob is a planned and controlled unit. Mobs occur during planned events. Examples of planned events are various domestic protests, political rallies, and confrontations between entities. In contrast, crowds are caused by unplanned or spontaneous events. Examples of unplanned spontaneous events are crowds gathered for food and water; distribution of limited resources, such as refugee supplies; and gatherings after religious or sporting events.

Before 1-4 Cavalry deployed to Bosnia in 1996, the squadron trained at the Combat Maneuver Training Center (CMTC) and was certified for the Bosnia deployment. The squadron had trained on handling crowds and was prepared to execute an array of civil-military missions. However, it encountered several incidents that were not anticipated during training — in particular, how to deal with mobs and refugees. Through the experience of the squadron as a whole, we identified several characteristics of mobs and refugees and then developed actions that would enable the squadron to move from a reactive condition to one that put the local commander back in control. First, I'll discuss the characteristics that we identified in both mob and refugee movements, especially in Bosnia, then address the tactics, techniques and procedures we developed to gain control of the situation. I'll conclude with Standard Operating Procedures (SOPs) and Contingency Plans (CONPLANS) that can be applied to company teams or even platoons.

In April 1996, the squadron encountered its first mob activity. The incident was sparked when the Moslems gathered a group of people to cross the Inter-Entity Boundary Line into Serb-held territory. Our first indication of movement was when our observation posts started to report unusually large groups of people crossing the IEBL. The group moved into a former Muslim village on the Serb side, close to the

IEBL. The Serbs reacted by deploying their special police forces into the town, initiating a conflict. The two sides faced each other and threw various items at each other, including hand grenades. Attempts by our troops to stop the incident resulted in soldiers quickly finding themselves between the two parties and unable to affect the situation.

One of the unique aspects of the Bosnia refugee situation is their forced removal from their homes, either by opposing forces or their own friendly forces. In addition, most refugees carry all of their possessions in or on a single vehicle, either motorized or animal-drawn. Typically, every group of refugees has a leader or leaders. Usually the refugees have a plan on where they want to displace to, even if it is just following another group. Typically, refugee groups are built around someone's family unit and usually have family members of all ages, to include children and elderly. These groups then attract former neighbors or people that have lost their families. They have, on average, little food and are almost always short of water.

Like refugees, mobs also have leaders. If the mob is planned, the mob leaders may have communication with their "headquarters." During events in Bosnia, this was usually done via a person following the leader with a concealed pocket radio. Runners using residential phones were also used. Leaders control the mobs by moving the participating people to a designated area by vehicle, then forming and moving to the targeted area. Upon completion of the demonstration, the people in the mob are then moved to a pick-up area to meet their transportation.

The key to dealing with both refugees and mobs is preparation. Shaping the area of operation is still the first part of any operation, including peacekeeping. Therefore, Intelligence Preparation of the Battlefield (IPB) is paramount. Both mobs and refugees use avenues of approach, are affected by terrain, and typically are characterized as moving units. Therefore, Named Areas of Interest (NAIs) should be determined,

Decision Points selected, and a Decision Matrix developed. The key to control of refugees and mobs is controlling their mobility. Choosing the routes they can use and restricting their mass and speed helps control their mobility. Therefore, Targeted Areas of Interest (TAIs) still play an important part in shaping any area. In this case, TAIs are made up of obstacles, checkpoints, and holding areas.

A mob or refugee scenario would have preplanned TAIs that have prepared obstacles linked with the terrain. These obstacles in the preplanned stage are just engineer stakes and wire laid at a TAI so that a tank or scout section can close the obstacle in minutes. Every vehicle in the unit, therefore, will carry the necessary wire and other class IV needed to complete and close any TAI obstacle.

Early detection of refugee or mob activity is important. This will give the commander and the operations group time to start the orders process and activate the unit's plan. Likewise, the destination of the groups needs to be known quickly. Contact must be made with the group and maintained. Using available Civil Affairs (CA) or Counter Intelligence (CI) assets is best. The bottomline is to get someone to find the mob's or refugee's leadership and try to extract information while providing location and situational updates. Commanders can then slow, channel, or divert the groups as needed, using the network of TAIs.

The general principle towards refugees is to keep them moving towards food and shelter without crowding routes or blocking key terrain. The general principle in dealing with mobs is to slow or prevent the gathering. Once a mob or refugee movement is detected, it is important to act quickly in order to maintain the initiative. Clearly, the commander needs to identify and refine his intelligence requirements in a timely fashion. The soldiers manning the OPs, checkpoints, and even in convoys can help provide the commander needed information.

In addition to TAIs, holding areas are important to shaping any area. The idea of a holding area is to receive incoming groups and then break them down into manageable sizes. Holding areas can be used to supply refugees with water, in addition to breaking up masses of people. Holding areas are ideal for coordination or processing points for local authorities and NGOs, such as the UNHCR. This will allow the com-

mander to thin the flow of groups entering an area of operation.

In general, any plan would be to limit the maneuverability of any group by using TAIs. Both mobs and refugees usually stay on roads which are also avenues of approach. Therefore TAIs can be very useful. Refugees require channeling. They tend to be passive and are easily guided. However, if they do not receive guidance, they will gather wherever they can obtain food, water, or shelter. The lack of a plan could result in potential logistical or humanitarian problems.

Mobs, on the other hand, require containment. In addition, within planned crowds there will be people designed to attract press coverage. Elderly, children, and pregnant women all have been forced to the front of mobs to be beaten by the Serbs, thereby increasing press coverage. Efforts should be made to safely separate these people from the mob. For example, a restriction of no vehicles in an area will cause the mob to walk further and the elderly, children, and pregnant women to drift to the rear of the mob, where they are less effective.

A tank or scout section can man a typical TAI. It is important to tie the TAI into other support and overwatch so that the section is not isolated. Consecutive TAIs could also be used to support one another. It is important that once the TAI is established, the sections both man their vehicles and provide themselves local security on the ground. This security should be in the form of two-man teams. The security teams also provide the important function of giving the members of the mobs or refugees someone to talk to. Avoid using the TAIs as blocking obstacles. Rather TAIs should act as delaying points that thin out the crowds, gather intelligence from passers-by, and observe situational conditions.

CONPLANS and SOPs are critical to success when dealing with mobs and refugees. Units should develop an execution matrix of the tasks required for dealing with mobs and refugees. This matrix needs to be updated daily so as to properly match sections and platoons operating in respective areas with their required CONPLAN tasks. For example, patrols should be briefed on NAIs, TAIs, and key terrain for each CONPLAN and be prepared to execute. In addition, patrols should have, as a SOP, the required equipment and barrier material needed to execute CONPLANS included in their vehicle loadplans.

In review, mobs and refugees typically follow a plan. Both mobs and refugees have leaders and a command and control system. Likewise, mobs have a means of communication with their "controlling headquarters." Armor units can successfully manage mob or refugee activity if they prepare. Intelligence preparation of the battlefield, decision points, and a decision matrix focused on controlling mob or refugee movements are the keys to dealing with mobs and refugees.

The August 1996 incident ended successfully as squadron elements enacted their plan and slowed the mob by using several scout sections along the mob's route. These sections acted as a sifter, causing the mob to thin as mob members were stopped at the different sections. Able to go no further, mob members could only yell or talk to the soldiers present. By the time the mob reached the final TAI prior to Mahala, it had been reduced from several hundred to a few dozen people. This enabled the squadron soldiers to negotiate the withdrawal of the mob back to their intersection start point. A key point of this negotiation was the promise of information on the current situation to be relayed to the mob leaders via the senior squadron officer present. Eventually the Serb police were allowed to return to their station and the mob boarded their buses and returned home.

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Gulf War Story in *ARMOR* Cited for Distinguished Writing

Historian Stephen A. Bourque's account of the capture of Safwan, site of the surrender talks that ended the Gulf War, was one of only two articles recognized as outstanding achievements in writing on U.S. Army history by the Army Historical Foundation.

"Incident at Safwan" appeared in the January-February 1999 issue of *ARMOR* and recounted the frantic efforts to capture the Iraqi airfield where General Norman Schwarzkopf wanted to hold the talks. When the location was selected, General Schwarzkopf had been under the impression that it was already in Allied hands, but this turned out to be incorrect. Bourque's story described how LTC Bob Wilson's 1-4 Cav was tasked to move to the airfield at Safwan and secure it for the talks, although the location was then still in enemy hands.

(The article is currently accessible at the *ARMOR* web site, knox-www.army.mil/dtdd/armormag.)



The Foundation's award program recognizes significant contributions to the preservation and promotion of the history and heritage of the American soldier. Awards were given in two categories, books and articles. Bourque's entry was cited in the Professional Army Journals category.

Three books were also cited, including *The Eyes of Orion: Five Lieutenants in the Persian Gulf War*, by Alex Vernon. (This book is re-

viewed in this issue of *ARMOR*.) Three frequent *ARMOR* contributors won the other two book awards: Peter Mansoor, for *The GI Offensive in Europe: The Triumph of American Infantry Divisions*, and Professor George F. Hofmann and General Donn A. Starry, who edited *Camp Colt to Desert Storm: The History of U.S. Armored Forces*.

Professor Hofmann's article on tanks in the Korean War is the cover story in this edition of *ARMOR*.

DRIVER'S SEAT

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duty, and instructor duty here at Fort Knox, to name several. As the Army changes, there will be a continuing need to support such positions. As an example: in Fiscal Year 99, for the MOS 19K, there were 1,082 SFCs competing for 418 platoon sergeant positions. For the MOS 19D, there were 537 SFCs competing for 182 platoon sergeant positions. Compare this to projections for FY 02, when in MOS 19K, 1,044 SFCs will compete for 315 platoon sergeant positions and, for MOS 19D, 592 SFCs will compete for 201 platoon sergeant positions.

Today, in quite a few units, staff sergeants are serving as platoon sergeants. Senior leaders must be aware of the needs of the total force so that we can work together to meet the needs of the

units, the NCOs, and the Army. Rotation cycles of assignments and special duties do not always meet the NCO's needs in getting into, or sometimes out of, the branch-qualifying positions as soon as they are eligible. When counseling the NCO, senior leaders should be advising the NCO in what TDA assignment he would best serve the Army after he branch-qualifies. Or, if he is in a TDA assignment, when and how best to get into a qualifying position that best meets the needs of the NCO, the unit, and the Armor Force. The senior leaders also should be working closely with the Armor Branch assignments office to have the NCO rotate out of the leadership job and into other beneficial duty positions once he has met the requirements of branch certification. If we are to keep the Armor NCO compe-

titive for promotion, it is essential that these NCOs rotate as they become branch-qualified at their current grade.

The Office of the Chief of Armor, along with Armor Branch and myself, are constantly working to improve the capabilities and opportunities of the Armor Force. Having an 18-month branch-qualifying requirement for NCO leadership positions is currently the best way for us to ensure that we can care for the Armor NCO Corps. It also assists in providing to commanders, now and in the future, great noncommissioned officers prepared and certified to execute their tasks on the future battlefields.

"TODAY IS THE BEST DAY
TO BE A SOLDIER."

“Fight Your Tank, Sergeant”

by Master Sergeant Dennis White

This article was MSG White's entry in the Draper Leadership Essay Contest. Although it did not place in the top three entries, we believe it deserves to be published in ARMOR.

“Bravo, one five, this is Charlie niner two,” announced the tower at range 118. “Clear and elevate all weapon systems and proceed to the base of the tower. A maintenance team will be on site to troubleshoot your tank.”

I was a young corporal at the time, the gunner on tank B-15 in B Troop, 3-12 Cavalry in the fall of 1986. My tank commander (TC) was SFC Thomas “Pappy” La Fontaine, a man I would grow to do my best to emulate. Our problem was that the tank thermal sight (TTS) was out and our laser range finder (LRF) was flashing triple niner five.

Most TCs would follow the tower's instructions. Pappy, however, was not your average tank commander. He replied, “Negative! We will complete the last two engagements using degraded mode.” The next thing I hear him say was “Index one two hundred, battle carry sabot, crew report!” I was now concerned that our gunner score would not be as high as I had hoped due to our systems failure. Our wing tank reported, “Targets up, TRP two.” The TC overrides my power control handles and lays the gun on. He screams, “Gunner, battle sight tank.” Our crew responds with, “Up, Identified. Fire. On the way.” “BOOM.” Our tank rocks back from the recoil. Our wing man yells, “Over Line!” Pappy responds with, “Over, drop one half form. Fire.” I squeezed the trigger again. “BOOM,” it seemed like an eternity before Pappy yelled, “TARGET, cease-fire, crew report!”

We all had a sense of relief as we made our way to the tank crew evaluation (TCE) tent. We bypassed the grill where LTC J. W. Thurman was cooking “Bolo Burgers” for those crews that didn't shoot so well. We had done as we had trained at the tank crew proficiency course (TCPC) at home station. We had done as Pappy had always said, “Fight the Tank!”

Though this was only my first gunnery, I soon realized that technology was only a tool, and that the most important thing

for a tank crew was to be able to fight your tank, regardless of the circumstances.

In May of 1990 at the National Training Center, it was the last rotation fought by BLUFOR using the M60A3 main battle tank. As a newly assigned TC, I was fortunate to have an outstanding and loyal tank crew that I will always think of with fondness. My platoon was attached to an infantry company that called themselves “The Hell Raisers.”

During a movement to contact in the central corridor, our crew luckily survived the initial wave of OPFOR. But, true to Murphy's Law, something went wrong with our beloved panzer. The stabilization in the fire control system went out. The timing couldn't have been worse as the AGMB was headed our way. So, we went to ground north of the Racetrack. My driver, PFC Robert “Bull” Van Slyke, found a great defensive position in a narrow cut at the base of the ridge along the north wall.

In our struggle to survive the ensuing OPFOR attack, we didn't realize that our position would provide us superb concealment and keyhole shots into the flank of the enemy. Enemy vehicles passed our position and, my gunner, SGT Roland “Sporty” McEachin steadily picked them off, one by one, using degraded gunnery techniques. Again, we were “Fighting the Tank!” After the dust settled, we learned that we had destroyed over 40 enemy vehicles before a BMP finally located our position and shot us in the grille doors. It was a wonderful day to be a tanker!

Five years later, I was assigned as a platoon sergeant in 3-8 Cavalry at Fort Hood, Texas. We were the first unit to draw the latest main battle tank in the Army's inventory, the M1A2. On draw day, I anxiously climbed into the turret of my new panzer and sat in the TC's seat. I could not believe my eyes. I looked around and was overwhelmed by the technological advances. I asked myself, “Is this a tank or a cubicle in someone's office?” Some of the advances were far beyond anything that I could imagine. The addition of a commander's independent thermal viewer (CITV) is, in my opinion, the most significant improvement made to the M1 family of



tanks. The “Designate” capability enables the crew to engage targets much faster by allowing the TC to acquire targets while the gunner engages another target simultaneously. But, the rest, to me, was “Jedi Tanking,” for lack of a better term. We went through new equipment training on our new panzers with great zeal and enthusiasm. We learned how to operate all of the digital systems of the tank. But, something wasn't right. We were being told to get down inside to fight the tank. I heard new terms like “Check your mail box!” I just may be an old DAT stuck in his ways, but this felt strange.

I am quite sure you are wondering how all of this relates to “Leadership in the Digital Age.” It is quite simple. Leadership is about *people*! My concern with the eye in the sky technology is we will lose sight of the real weapon we have in our inventory, that being the *American soldier*.

The new technologies such as IVIS, Pluggers, e-mail, and PowerPoint, to name a few, are only tools designed to enhance our capabilities. We must remember and continue to teach our soldiers the basics — to estimate range with the naked eye, read a map, walk across the street to speak to a colleague, stick your head out the hatch and assess the surrounding environment. These technologies can take us, as leaders, away from our troops if we allow them to. Interacting with our comrades instead of sending them a “digital burst” should always remain the preferred method.

In closing, I understand that many people in the Armor Community will throw stones at me for these random thoughts on the Digital Age, but I will always say, “*FIGHT YOUR TANK, SERGEANT!*”

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General Wood, at right, discusses plans for the breakout with Lieutenant General Omar Bradley, center, and Major General Manton Eddy.

Before There Was Digitization:

How MG J.S. Wood's 4th Armored Division Stormed Across France Without Written Orders

by Major Donald E. Vandergriff

*“Burn Em! That’s the last written field order this division prepares! Every order I give will be verbal, either eye-to-eye or by radio.”*¹

After viewing his division’s first written order in combat, MG John S. Wood, commander of the 4th Armored Division, told his G3 (operations officer) not to issue any more. Wood believed the formatted, five-paragraph order taught to U.S. Army officers at the Command and General Staff College at Fort Leavenworth would only slow down his division’s decision cycle in combat.

The fact that MG Wood could dispense with written orders while leading his division across France highlights the level of training, cohesion, and education that a unit would need to achieve in order to execute verbal mission orders.

The 4th Armored Division’s “daring, hard-riding, fast-shooting style” was made possible through the execution of mission orders. But only by “throwing away the book,” ironically, did the division accomplish the armored warfare envisioned by the writers of *FM 17-100, Armored Command Field Manual, The Armored Division*.²

The division was activated on April 15, 1941, at Pine Camp, New York, and stayed together and trained in the United States for 32 months before shipping out to England in December 1943. By that time, the division had trained in New York, Tennessee, the Desert Training Center in California, and Camp Bowie, Texas. In July 1944, the division entered combat for the first time during *Operation Cobra*, the breakout from the Normandy beachhead, and from that point on led the rest of the Army across France and into Germany. The division offers valuable lessons in developing the leadership and cohesion that allowed it to become one of World War II’s premier armored divisions, and its commander, Major General John Shirley Wood, the “American Heinz Guderian.”³

The 4th AD adapted many tenets of German maneuver warfare. The objective of maneuver warfare is to exploit firepower, mobility, and shock action through aggressive, audacious tactics and techniques. It optimizes the capacity to move, shoot, and communicate more effectively than the enemy. The 4th AD could do this because its commander and his subordinates modified or defied existing officer and unit personnel policies as they implemented an

evolving doctrine. Employing the fundamentals of maneuver warfare, the 4th AD exploited, pursued the Germans across France, and then carried out a mobile defense against a determined, well-trained, well-equipped, and well-led enemy in forested terrain inhabited by an unfriendly population.

By the time the division entered combat, with none of its units bloodied, it was ready to fight. Wood had reason to feel that his division was ready to take the fight to the enemy because it had been preparing for more than three years, in snow, mountains, sand, and hard scabble plains. Probably no other outfit in our military history had trained together longer, more intensively, or in

“The 4th AD adapted many tenets of German maneuver warfare. The objective of maneuver warfare is to exploit firepower, mobility, and shock action through aggressive, audacious tactics and techniques. It optimizes the capacity to move, shoot, and communicate more effectively than the enemy.”

more varied terrain and weather than the 4th Armored Division. It was ready to a fare-thee-well.⁴

And as it fought, it got better because its officers and soldiers could easily assimilate new lessons learned from the battlefield. This was the key to success. Flexibility became the division’s watchword, and accepted way of doing business.

Though the division was divided according to its Table of Organization and Equipment (TO&E) into three subordinate brigade-size commands, lettered Combat Command A, B, and Reserve, the actions of Combat Command A (CCA) merit specific study, providing many examples of rapid and decisive decision-making, from the individual tank crew to the combat command commander. The 4AD’s offensive in Lorraine demonstrated speed, “not just speed of movement, which is important, but speed in everything.”⁵

In several battles, the principles of leadership and cohesion held firm against the best the Germans had to throw at the U.S. Army at the time. The division had to employ maneuver warfare to succeed because it faced longer-range weapons, manned by veteran German soldiers with some of the best technology of the day. The Germans had better tank sights and range-finding equipment, and larger main tank guns

with more hitting power and longer ranges. Many of 4AD’s battles in France in 1944 would pit its smaller, yet well equipped forces against determined German units, some of high quality, such as the Panzer divisions, and some of inferior quality, such as the Volksgrenadier divisions. In many cases, the division operated its combat commands over vast distances, yet the long experience operating as a team bonded them as they fought. They had trained and grown to think as a team, with a single mind.⁶

It was the long period of training and building cohesion that enabled the division to perform at such a high level. The soldiers themselves were as confi-

dent as they should have been. One of their noted members, retired Brigadier General Albin F. Irzyk, remarked that, “We felt that we were destined for greatness, much the same feeling that a college football team must have when it senses the national championship.”⁷

The entire division did not stay together as a team through its three years. The Army’s poor policies stripped the 4th AD of many of its trained members to form the cadres of other divisions. In fairness, there was no choice: there were not enough trained personnel in the Regular Army at the beginning of the war to train the new divisions. In 1942, many members of the 4th AD were reassigned, yet a cadre of key leaders remained, allowing the division to remain effective. General Bautz describes how the division overcame this: “Though many soldiers were taken away in 1942, many leaders and staff officers stayed. This cadre of individuals, particularly men like [Bruce] Clark and [Creighton] Abrams, allowed the division to retain its lessons learned. The learning and innovating did not stop as a large body of lower ranking men were pulled away to create other divisions.”⁸

There were key reasons that allowed the 4AD to remain effective despite the loss of several thousand personnel. First, the division retained its key offi-

cers. Another reason was the command atmosphere: Wood fought hard to create and sustain an atmosphere of trust during his tenure as division commander. He began training his division in a situation that was no different than any other division. His new officers, the men who would train the division for combat, and lead its men against the famed German Army, were no more than amateurs.⁹

J.S. Wood and His Officers

From the time of his youth, Wood was an individual of strong character and a naturally strong leader. A graduate of the University of Arkansas, he then attended West Point, which had a strong interest in him due his football reputation and his academic record. At the Academy, he excelled in both academics and athletics, particularly football, graduating in 1912. He became known as the professor, or “P,” for taking the lead in helping tutor other students.

As a Regular Army officer, Wood constantly showed his desire for independence and responsibility. In 1936, already a known advocate of maneuver warfare and a student of the writings of Charles de Gaulle, B.H. Liddell-Hart, and J.F.C. Fuller; Wood sought assignments that would give him experience. Despite the advice of friends, Wood turned down attendance at the Army War College and instead took command of the Army’s only independent truck-drawn howitzer brigade, stationed in Des Moines, Iowa.¹⁰ It was during this assignment that Wood experimented with mechanization and mobility. In numerous exercises, Wood would use his initiative to move his howitzer brigade thousands of miles to separate firing points. He tested his unit’s abilities, as well as demonstrating its mobility, a trait unknown for artillery at the time. Despite Wood’s noble efforts, he continued to be criticized by senior officers, even as he was reporting to become Patton’s artillery chief in the newly formed 2nd Armored Division.¹¹

Upon assuming direction of Patton’s artillery in September 1939, his character was once again called into question by senior officers because of his advocacy of maneuver warfare. Wood now attacked, verbally and in writing, the traditionalist views that advocated linear — or attrition — warfare. In numerous reports and articles, he stressed a familiar theme: “The motor offers one of the few hopes of securing surprise in modern war.”¹² Despite his warnings

and recommendations, and the demonstration of the power of Blitzkrieg as German forces overran Poland and France in 1939 and 1940, there was still resistance to an American armor force. It would fall on the shoulders of Wood to prove the value of his words with actions.

At the beginning of World War II, the Regular Army had 14,000 officers and 120,000 enlisted men. Almost overnight, the officer corps expanded about 60-fold. The war exposed Regular officers to responsibilities far beyond anything they had experienced, and forced them to rely on subordinates who were essentially commissioned amateurs. Most division commanders and their regimental commanders, who were largely pre-war regulars, turned toward authoritarian, top-down methods of command. They issued detailed orders, insisted on unquestioned obedience, and used their staff officers to check on compliance. Reposing trust and confidence in a subordinate entailed the possibility that he might fail, and embarrass his ambitious superiors with their eyes on one of the many commands being formed.¹³

Wood was the exception to this trend, taking the pain of creating autonomy that would allow his officers to learn from their mistakes. He won their loyalty, and developed subordinate leaders not afraid to take risks in the face of German actions.

Wood got the opportunity to combine the theories of maneuver warfare advocates such as J.F.C. Fuller and Heinz Guderian with his own experiences when he was offered an armored division in 1942. Wood took over the division in June, 1942, at Camp Pine, N.Y. He immediately brought with him simple, yet time-proven philosophies such as,

- Audacity (de l’audace)
- The indirect approach
- Direct oral orders. No details, only missions
- Movement in depth always. This allows flexibility and security of flanks
- Disregard old ideas of flank security
- Organization of supply (taking rations, gas, and ammunition in rolling reserve)
- Personal communication with commanders
- Never taking counsel of your fears

- Never fear what “they” will or do (“they” being the same old bogie — high officialdom or general opinion)
- Trusting people in rear to do their part, a trust sometimes misplaced, but not generally.¹⁴

“He would try anything once; he encouraged initiative.”¹⁵ With this fundamental outlook toward training, it was not surprising that many officers, such as Major Creighton Abrams (later Army Chief of Staff), and Lieutenant Bruce C. Clarke (later NATO commander) became brilliant officers.¹⁶

The 4th AD did a lot of experimenting, and “Wood had ideas and was willing to give them without reserve.” One of these inventions was the use of the task force. At Pine Camp, the 4th Armored Division established the task force principle.... One key derivative was that the building blocks of such task forces — especially the tank and armored infantry battalions — would not be permanently assigned to any higher headquarters (a combat command in an armored division), but rather tasked out to one or another such headquarters depending on the tactical situation.¹⁷

Wood speeded up decisions by using this ability to change task organizations to solve a particular tactical problem. From the first day of his command, Wood did his utmost to ensure that his commanders and their staffs were not focused on processes or formulas. Wood understood that over time, through constant training, officers memorized and verbalized a seemingly complex decision-making process. He was against these tidy methods of control and written prescriptions for ensuring control. He wrote, “Contrary to the practice in many other armored divisions, we had no separation into fixed or rigid combat commands. To me, the division was a reservoir of force to be applied in different combinations as circumstances indicated, and which could be changed as needed in the course of combat by a commander in close contact with the situation at the front. There is not time or place for detailed orders, limiting lines or zones, phase lines, limited objectives or other restraints.”¹⁸

In order to create such flexibility, Wood stressed hard, realistic training. The division truly exemplified the phrase, “Train as you fight.” Constant maneuver training, in all conditions, enabled the commanders of companies,



A column of 4th AD tanks pass a destroyed German vehicle in the French town of Auvencheil-Aubac in September 1944.

battalions, and the combat commands of the division to know each other as officers seldom do. The division trained on how to task organize for a particular mission, and then, on Wood's orders, reform the task forces while on the move to meet a new threat. Wood did this with no fancy briefings or lengthy rehearsals. He used the radio, and face-to-face oral instructions to train his division to operate without written directives. Speed was always on Wood's mind as he trained, not just speed of motion, but speed in everything the division executed. The training enabled the division's officers to do away with many standardized procedures that would slow down their actions, such as abiding by strict radio procedures.

For example, Wood's battalion commanders and the division command learned to recognize each other by voice — authentication by familiarization. This increased flexibility, and translated into the ability of commanders to change directions more quickly, without worrying that the orders received were false. Rapid decision-making increased with operating procedures that eased the ability of commanders to make decisions. This translated into fluid tactics. When the division or its subordinate commands attacked, it was by flanking movements. The division practiced moving and attacking behind enemy lines. The spirit of such aggressive tactics infected the entire division.

Wood never let his standards drop, knowing that the Germans would never give the division a second chance. He kept his training intense and realistic.

From physical fitness to collective training, there was never a break in training. In force-on-force battles, opposing forces fought with live .30 caliber ammunition slapping against "buttoned up" turrets. Maneuver, speed and competence — the basic military skills — were taught and practiced over and over in varying situations.¹⁹

Wood exemplified the best in a senior officer. With a foundation established in the basics of soldiering and discipline, Wood created a command climate that was open to innovation. He believed loyalty was a two-way street, and continually stood up for his subordinates, especially when they followed his evolving armor doctrine. He had an intense — indeed fierce — sense of loyalty down; he was ready to act as a shock absorber for all who served under him. But he had little tolerance for rigidity, inflexibility, or stupidity and he could not condone it, even in his superiors; he felt his highest loyalty up was to his country and the Army he served, not to any single individual, even one of superior rank.

In the fall of 1942, 4th AD executed maneuvers in central Tennessee as part of LTG Leslie McNair's methodical training plan to prepare divisions for combat. It was an opportunity for Wood to see what his subordinates could do with his premise of "I will let you decide what to do on the spot." It also allowed Wood to shield them from his conservative superiors. An example of the fierce loyalty inherent in Wood's command style occurred after the division seized a bridge over the Columbia River in central Tennessee. Wood went

against guidance not to conduct movement at night. He seized the bridge after a surprise night march. The Second Army commander, Lieutenant General Ben Lear, criticized the officers of the 2nd Armored Division for being too aggressive and going beyond established boundaries. At that time, most officers adhered to the methods they had learned from the French Army — rigid adherence to staying within designated boundaries, reporting locations, and being on time. To leave the boundaries, even to outsmart the enemy through maneuver, was breaking the rules of the game in the mind of General Lear.

Wood bore the brunt of the verbal attack, by jumping between Lear and the division's officers, then said to Lear, "You do not know what you are talking about, either as to the employment of armor or of the quality of people in my division!"²⁰ Such moral courage can be traced to Wood's background, which fostered independence and commitment to excellence.

Finally, it must be highlighted that while Wood enforced high standards in both competence and performance, he was not a "martinet or a 'spit-and-polish' general."²¹ He enforced maintaining the proper uniform — keeping sleeves and shirts buttoned — and saluting, not merely to a higher rank, but as an informal "soldier's greeting." To Wood, discipline brought about pride, so essential in a good unit. While Wood knew discipline was important, he did not, as some leaders did, believe in "imposing your will... even by the martinet method."²² He refused to transfer

poor soldiers to other units, instead expecting his officers to train them. And as always, Wood exemplified the high standards he set by leading by example. He lived with his soldiers constantly, from the onset of his command until his departure in November, 1944.

Organized for Speed

By the time the 4th Armored Division entered combat in July 1944 in Operation Cobra, it was not only well trained, but capable of speed under the revised organization for armored divisions that followed lessons learned in early combat in North Africa. Lieutenant General Leslie McNair, commander, Army Ground Forces, and Major General (later General) Jacob Devers, then chief of the Armored Force, created an incredibly flexible organization, styled the "Type U.S. Armored Division, Sept. 1943." The earlier division concept of 1942 had established two combat commands, lettered A and B (CCA & CCB), which allowed commanders to improvise task organizations to meet likely situations. The problem with the 1942 design was that "it was too tank-heavy and lacked infantry and mechanized artillery."²³ Later studies forced the Army to create a well-balanced all-arms division, and added a third brigade-size headquarters, Combat Command Reserve (CCR).²⁴

Based on General McNair's goal, new divisions like the 4th AD were lean and simple, offensive in orientation, with attachments developed as necessary. Under the doctrine that had developed from the Louisiana Maneuvers and training throughout the growing Army, the corps was to be a tactical headquarters to handle a mix of infantry and armor divisions. It was the field army that allocated divisions to the corps, with combat service and service support assets when needed. Once combat began, units found it necessary to keep attached units at the division level. While other divisions kept attachments and task forces constant, the 4th Armored continued to change its mix of separate arms such as tanks, infantry, engineers, and artillery units throughout the 1944-45 campaign.²⁵

When 4th AD arrived in Europe, it had three tank, three infantry, and three artillery battalions, along with attached engineer, antitank, and tank destroyer units. It had a total of 11,000 officers and men. As the division broke out of Normandy in August 1944, it found that its training had given it the ability

to create *ad hoc* units to overcome German resistance and to adapt to the extensive road network. These factors increased the speed of its advance. The 4th AD advanced on parallel routes in order to reduce the number of vehicles on a single route, thus preventing traffic jams, and hitting the Germans from many directions. It was an agility that the division had maintained in training that "kept the advance moving."²⁶

A Doctrine of Improvisation

The division's fighting from July 1944 to October 1944 epitomized decentralized combat while fighting toward a common goal. After their breakout from Normandy, 4th AD had to advance westward into Brittany to capture the peninsula's ports, as planned prior to D-Day. Wood saw the situation had dictated new plans, as did Patton, and they recommended moving east after breaking out of Normandy and encircling German forces attempting to counterattack into the flank of the 3rd Army. Planners at Lieutenant General Omar Bradley's 12th Army Group and at Eisenhower's Supreme Allied Forces headquarters saw no change in the situation. Orders came down from higher: Execute as planned. The 4th AD assisted follow-on infantry forces in clearing Germans from the Channel ports in western France, but at the price of losing precious time in cutting off and destroying German forces which were fleeing east to the German border. During this delay in August and early September — and also because fuel priorities were going to the British attempting to break out in the northern part of the beachhead — German forces had a chance to consolidate and reinforce, offering new resistance to the 4th AD. In a reversal of what had occurred during the previous five years of the war — where well-led, cohesive German units outfought Allied units — the 4th AD fought hastily thrown together German units, over-controlled by a centralized headquarters (Hitler). In this scenario, the U.S. forces were better led, trained, more cohesive, and had higher morale due to the teamwork developed over the previous three years and the months of recent fighting in France. Despite the 4th AD's advantages, the Germans could still fight and intended to counterattack the stalled 3rd Army forces, including 4th AD, in

the province of Lorraine in eastern France.

From the time the division rumbled through German lines at 9:45 on 29 July in the breakout from Normandy, it continually improvised with a different solution for every problem it encountered. On 30 July, after refueling their vehicles, the 4th Armored was instructed by Patton to seize all four bridges over the Selune River at the town of Avranches.²⁷ It is important to note that Wood sent the orders to conduct this critical mission over radio. CCB would attack the town from the north, and CCA would seize the bridges. CCA formed its task forces, also by radio orders, and CCA's commander, Colonel Bruce Clarke, had four separate task forces moving within



4th AD troopers keep their weapons at the ready during a break in the fighting in France in July, 1944. Note carbine in the guitarist's lap and the M3 "Grease Gun" at the fiddler's feet.

the hour.²⁸ Two of the bridges fell during the first assault, while the remaining two had to be seized after a prolonged battle with German SS troopers.

This first encounter demonstrated how valuable the 4th AD's strenuous training had been at moving decisively, exploiting the enemy's confusion, and saving lives.

The move westward into Brittany to clear German holdouts in the Channel ports diverted U.S. armor from pursuing the main German force that was retreating eastward. Wood had the foresight to point parts of the division east in anticipation of orders that would

allow him to continue the pursuit. When he received approval from his corps commander to move, the division quickly caught retreating German columns.

As the 4th Armored Division began its march toward Germany, it demonstrated more flexibility, ingenuity, and mobile firepower. The division's combat commands and task forces frequently changed configuration, based on changing tactical conditions. Wood made many of these adjustments by verbal FRAGO. He would observe the situation from the air in his small Piper Cub airplane, then land alongside a column using either a road or a field. Wood would pull the map out of his shirt, spread it, and point: "There's your boundaries, the units left, right and following us and the first, second and third objectives — let's get at it right now!" After brief details of enemy information, air and artillery support, Wood flew to the other combat commands, artillery headquarters, and to his division headquarters to brief his staff and put his concise attack order on a map and a few message-blanks. By the time the Army corps order arrived at Wood's headquarters, at least one — and sometimes all the 4th Armored Division objectives — had been taken and Wood's combat commands were mopping up.²⁹

The benefit of bottom-up decision making and cohesion paid handsome dividends in the pursuit across France. With tanks usually in the lead, Wood's columns moved along secondary roads catching fleeing enemy units on the main road, bypassing road blocks, and moving on. Logistical units — including maintenance teams, medics, and supplies — were mixed in with the division combat columns. It was not uncommon for logistical units to engage German units missed or left behind by the advancing combat units. During their three years of training, Wood had also ensured that the first responsibility of his logistical units was the ability to defend themselves against attack.

Artillery also moved with the lead columns, and was expected to keep up. Wood avoided the habit that most other division and corps commanders had developed during World War I — slowing their advance in order to wait for their artillery. In the 4th AD, whenever the lead elements needed fire support, the artillerymen would pull off the road and "hip-shoot" the fire mission.³⁰ Forward observers were in front in

tanks or overhead in airplanes (Piper Cubs) calling for suppressive fires, pinning German units down, and hence assisting with rapid maneuver.³¹

The 4th AD had also worked out incredible cooperation with the Army Air Corps, especially the P-47 fighter-bombers of the XIX Tactical Air Command (TAC) attached to the 3rd Army. The airplanes, acting as light cavalry did in the past, screened ahead to attack targets marked by air controllers riding with the tanks or by artillery observers in their light aircraft. The commanders of Wood's task forces would use the "flying artillery" of the XIX TAC to fill the gaps when artillery was not available for immediate suppression. The ground and air units also had developed teamwork and standard operating procedures that kept friendly fire or fratricide incidents to a minimum. The success of the fighter-bomber to the combined arms teams of the 4th AD was an obvious payoff after long months of practice. Training had led to confidence and mutual understanding by imaginative and highly competent leaders at all echelons, working with the driving spirit of their commanding general.³²

Despite the division's glaring success, Eisenhower decided to make them the secondary effort. By mid-September, Eisenhower's broad front policy — which diverted scarce resources to the British army's advance into Belgium and Holland — had given German forces the opportunity to regroup. Patton had also ordered attacks across the entire front of the 3rd Army throughout September, which also took away limited resources and slowed the 4th AD rapid advance.

Dwindling resources was not the only cause of stalling the division. Its immediate headquarters, the XII Corps, had become concerned about its flanks, which helped bring the division's advance to a standstill. The XII Corps Commander, Major General Manton S. Eddy, felt he needed to eliminate Germans bypassed by the 4th AD, so he ordered his infantry divisions to stop supporting the division and concentrate on destroying German pockets of resistance. In early September, despite being within reach of the German border, these factors, plus growing German resistance, brought the division to a standstill.³³

By September 1944, the Germans were eager to return to the offense. The German forces arrayed against the 4th

AD possessed few advantages. The Normandy breakout had cost the Germans some of their best units, and other strong units were sent north to fight the British and U.S. First Army. The German advantages were their superior equipment, such as the Panther and Tiger tanks, their knowledge of the terrain, and their posture on the defense. On the other hand, they were handicapped by poorly trained soldiers, units thrown together just prior to battle, and officers new to their units. Although combat experienced and well-educated in the art of war, from the tactical to the operational level of command, turbulence handicapped the officer corps in Fifth Panzer Army and Army Group G. "One significant problem with German command and control was the constant rotation of leadership at higher levels."³⁴

Despite lack of gasoline, Wood's division continued to defeat and repel fresh German forces and their counterattacks in mid-September. Ordered to encircle the town of Nancy and seize the high ground to the east of Arracourt, Wood was forced to divide the division into two thrusts, north and south of Nancy. During these operations, the division, particularly Clarke's CCA, provide examples of agility, initiative and depth. CCA conducted a river crossing, a forward passage of lines, a counterattack, then an exploitation and pursuit against reinforced German units defending in channelized terrain. These operations came to a climax when the division reunited at Arracourt and fought a mobile defense against better equipped and more numerous German troops.³⁵

Insights Into the Future

Oddly, there was a reversal of accepted historical roles during this period. While Wood and his subordinates sped up their actions, moving quickly on verbal mission orders, the Germans commanders operated under an extremely centralized system. The German military culture in 1944 turned into one where, "Generally, commanders lacked flexibility to make changes and were subject to court martial if they did so without first checking with Berlin. Orders were spelled out in great detail and subordinates had to follow them to the letter."³⁶ Hitler and his headquarters in Berlin and the *Oberkommando Wehrmacht* (OKW), attempted to control the actions of units down to and even below division level, employing the most modern communications devices to keep in constant contact with the front, army groups, and

army commanders. While Hitler attempted to manage two major warfighting fronts, his commanders wasted precious time waiting for permission to act. Hitler became so fanatical about making decisions that commanders risked court martial if they used initiative.

This climate of fear filtered down to regimental and even battalion commanders. Orders, once easily transmitted verbally, became detailed written transmission of actions. Subordinates were then expected to follow these orders to the letter. Gone were the days of *Auftragstaktik*, or mission orders; commanders now copied the orders of higher headquarters, making no adjustments to them. Only a few commanders, like Erwin Rommel, Hermann Balck, and Eric Manstein, still possessed the moral courage and character to argue with Hitler over “bad” decisions.³⁷

Another problem with the German shift toward centralized command and control was the constant rotation of commanders, not due to death in combat but the assumptions of new duties. Changes occurred at the theater, army group, army corps and division level. Commanders also assumed new formations just prior to executing difficult missions. For example, both the commanders of the newly formed 111th and 113th Panzer brigades had to expose themselves, in combat vehicles with attacking units, to motivate and ensure their orders were carried by lesser-trained subordinates. As a result, both commanders were killed around Arracourt as the battle was being fought to a decision. Their places were filled by commanders also new to the position and situation.³⁸

As the battles around Arracourt came to an end, the 4th Armored Division had destroyed 241 German tanks and inflicted high casualties. After the victory at Nancy and Arracourt, the division, combat commands, and task force commanders looked east toward Germany and proposed the seizure of Saarbucken. They continued to focus on how to defeat and destroy the enemy. The Germans had feared this, since no reserves were present to shore up the front. This exploitation was halted only by bad weather and the caution of senior U.S. commanders at levels above the 4th Armored.³⁹

What We Can Learn From the 4th Armored Division

In the 1980s, the Army was recovering from Vietnam and senior officers took lessons from the actions of the 4th

AD and used them as examples on how to employ the Army’s new AirLand Battle doctrine. A great effort had been made in the Army’s education system to ensure all officers knew and understood the Army’s first maneuver doctrine, outlined in the 1982 and 1986 versions of *FM 100-5, Operations*.⁴⁰ Lieutenants, in their first exposure to formal Army education at their officer basic course, were inundated with the tenets of AirLand Battle doctrine — Agility, Initiative, Depth, and Synchronization. Later, these officers would serve as battalion executive and operations officers, and company commanders leading units in the Gulf War.

The operations of 4th AD exemplified how officers should practice these tenets. The division’s relentless pursuit of an offensive upheld *Agility*, both physically and mentally. It takes physical stamina for officers and men to stay focused and to sustain tempo for days. They must be mentally agile to evaluate the battle and to exploit enemy gaps as they discover them. The division demonstrated *Initiative* throughout its training and in actual combat operations, from Wood down to the lowest ranking tanker, infantryman, artilleryman, and logistician. Wood’s ability to control a division with only verbal, short orders consisting of a few lines, or what the Army calls FRAGOs, is an extraordinary accomplishment that should be emulated by today’s Army, with its computer-generated orders. In applying *Depth*, the 4th AD fought non-linear warfare, attacking enemy weaknesses miles behind German lines. These fights, while mentally and physically stressful, placed demoralizing pressure on the enemy.⁴¹

The 4th AD was able to practice this style of warfare for a number of reasons that we can emulate today:

- Logistics were forced forward, traveling with combat formations. Also, units lived off German supplies left by fleeing troops. Unit commanders did not fear for the security of their logistical units because they knew how to fight, and were soldiers first and technicians second.

- The division maintained small staffs. Competence and experience eliminated the need for most paperwork.

- Command, control, communications and intelligence were not deterministic. There was no separate chart or process to ensure they occurred. Constant practice ensured unity of effort.

- The division never massed its combat power up front. Using aircraft and autonomous reconnaissance units, it was able to maintain uncommitted units as a large tactical reserve. In effect, it was “reconnaissance pull,” allowing Wood and the CCA and CCB commanders to shift to routes of least resistance in order to maintain initiative and momentum.⁴²

- The incorporation of assisting Army Air Corps fighter bombers used as “flying artillery.” The planes attacked German tactical reserves, and enhanced the movement of the ground element.

The 4th AD was a maneuver-oriented division. It did its utmost to avoid useless casualties in frontal assaults. It sought to collapse the enemy from within, by attacking his headquarters and support assets.⁴³ Future units might find themselves fighting the same way — widely dispersed, coming together to fight or raid enemy weaknesses, and then dispersing to avoid strikes by nuclear or chemical weapons. They must be agile, with commanders possessing the initiative, to destroy high value enemy targets pinpointed by intelligence-gathering systems and relayed by digital technology, or moving quickly to exploit enemy weaknesses. In these rapidly changing environments and threats, commanders will also have to make rapid decisions. Units will have to be trained in encountering different enemies in the spectrum of conflict from low-intensity in urban environments to high intensity in desert terrain employing different tactics, and countering them with a combination of drills and tactics that will rapidly destroy or neutralize an enemy’s units or his will to fight. In the future, time will not allow the U.S. Army three years to prepare. It must possess a culture whose foundation rests on its personnel system, which creates leaders who can command units of excellence that are both ready to go to combat on a moment’s notice.

The author would like to thank MG Ed Bautz, Chuck Spinney, John Tilson, Pierre Sprey, William Lind, and Bruce Gudmundsson for their insights.

Notes

¹Discussions with Major General Edward Bautz, USA, (Ret.) from Dec 1996-September 1997. General Bautz served as General Creighton Abrams’ S3 (operations officer) and XO (executive officer) in 1-37 AR, 4th Armored Division, during the training of the division from 1942

through 1944, and in its critical campaigns in France and Germany, 1944-1945. Shortly after relieving Bastogne, General Bautz was moved up to be S3 for Combat Command A (brigade), 4th Armored Division.

²U.S. War Department, *FM 17-100, Armored Command Field Manual, The Armored Division* (Washington, D.C.: U.S. Government Printing Office, 1944), p. 2-4. This manual was written based on the experiments and training conducted by the 4th Armored Division from 1942 through 1943.

³Discussions with Brigadier General Mike Lynch, USA (Ret.), 24 May 1998; John Wood and Heinz Guderian suffered the same fate. Both were relieved for having out-thought their seniors, thus gaining credit that deflated the image of their superiors.

⁴Lewis Sorley, *Thunderbolt, From the Battle of the Bulge to Vietnam and Beyond: General Creighton Abrams and the Army of His Times* (New York, N.Y.: Simon & Schuster, 1992), p. 46.

⁵William S. Lind, "The Theory and Practice of Maneuver Warfare," in *Maneuver Warfare: An Anthology*, edited by Major Richard D. Hooker, (Novato, Calif.: Presidio Press, 1993), p. 7. This is a compressed APEX, i.e., the steps involving analysis, planning and execution. This reflects the true meaning of maneuver warfare based on the ability to exploit favorable operational and tactical options as they arise, while overcoming unfavorable situations and circumstances that could cause failure.

⁶Major Dean A. Nowowiejski, "Achieving Digital Destruction: Challenges for the M1A2 Task Force," in *ARMOR*, January-February 1995, p. 21. Situational awareness is the thorough knowledge of both friendly and enemy elements. In a technological sense, this is translated to a small screen in the M1A2 for commanders to view their place in the larger formation and unit. This will hopefully decrease fratricide (friendly fire) incidents.

⁷Brigadier General Albin F. Irzyk, (Ret.), "The Name Enough Division," in *ARMOR*, July-August 1987, pp. 8-12; General Irzyk served as operations officer (S3), executive officer (XO), and commander of 8th Tank Battalion during the 4th Armored Division's fighting in Europe.

⁸Discussions with Major General Bautz, USA (Ret.) 12 August 1997.

⁹Author interviews with Army officers March-August 1997. Officers' complaints centered around the turnover of personnel as soon as a unit returned from a productive and infrequent CTC rotation.

¹⁰At the time, there was no rigid management of officers. Successful career patterns varied, but those of successful peacetime officers at the time relied more on political connections or working in positions that were under the view of senior officers than on competence in the field. George C. Marshall, Dwight D. Eisenhower, and George S. Patton Jr. all thought they had come to the end of their careers by the mid '30s due to the assignments they were serving in.

¹¹Hanson W. Baldwin, *Tiger Jack* (Fort Collins, Colo.: Old Army Press, 1979), pp. 104-106; "The prophets of the future form of war were without honor in their own country."

¹²Hanson W. Baldwin, " 'P' Wood of the 4th Armored," in *Army* (Arlington, Va.: Association of the United States Army, January 1968), pp. 50-51.

¹³Russell F. Weigley, *History of the United States Army* (Bloomington, Ind.: Indiana University Press, 1984), pp. 598-600.

¹⁴Sorley, *Thunderbolt*, pp. 36-37; these were not Wood's exact words, but Dr. Sorley's interpretation of several prominent officers' insights into Wood's methods. General Bautz reinforced these approaches during a discussion with the author about General Wood's leadership style.

¹⁵Baldwin, *Tiger Jack*, p. 113.

¹⁶Baldwin *Thunderbolt, Tiger Jack*, p. 50 and 113.

¹⁷Sorley, pp. 36-37. This concept was based on Adna Chaffee's concept of armor.

¹⁸Baldwin, *Tiger Jack*, p. 52.

¹⁹Baldwin, *Tiger Jack*, pp. 144-147.

²⁰Discussions with Major General Bautz, USA (Ret.), 27 July 1997; see also Baldwin, *Tiger Jack*, pp. 124-126.

²¹Allan R. Millett, *The General: Robert L. Bullard and Officership in the United States Army 1881-1925*, pp. 100-106 and 140-49; Millet discusses Pershing's use of fear in order to impress the British and French generals in WWI, which influenced the leadership style of the entire American Expeditionary Force (AEF), and in effect stifled decentralized leadership. This began the American tradition of authoritarian leadership style.

²²U.S. Army, *The Officer's Guide* (Washington, D.C.: National Service Publishing Co., 1947), p. 247.

²³Discussions with Major General Bautz, USA (Ret.) 12 August 1997.

²⁴Jonathan M. House, *Toward Combined Arms Warfare: A Survey of 20th-Century Tactics, Doctrine, and Organization* (Fort Leavenworth, Kan.: U.S. Army Command and General Staff College, Combat Studies Institute, August 1984), p. 108.

²⁵Dr. Christopher R. Gabel, *The Lorraine Campaign: An Overview, September-October, 1944* (Fort Leavenworth, Kan.: U.S. Army Command and General Staff College, Combat Studies Institute, February, 1985), p. 14.

²⁶After-action reports of the 4th Armored Division, 29 July-30 September 1944, provided by Major General Bautz in November 1995.

²⁷Major General Bautz made an appearance on the television show, *Modern War*, hosted by William Lind in January 17, 1997, discussing the actions of 4th Armored Division and maneuver warfare. Afterward, a group of U.S. Marine Corps lieutenants asked General Bautz how long did it take his battalion [Task Force 1-37 Armor, or Task Force Abrams] to move from an assembly area to conduct an attack. General Bautz remarked that it took 30 minutes to conduct a hasty attack from the time they received the order to "getting on the road." The lieutenants replied they were being taught to plan a platoon deliberate attack in six hours.

²⁸Colonel Bruce Clark would later become General Bruce Clark, hero of the defense of St. Vith during the Battle of the Bulge in December

1944. In the early 1960s, he was supreme commander of NATO.

²⁹Baldwin, *Tiger Jack*, pp. 41-42.

³⁰"Hip-shoot" means firing artillery missions off a compass bearing using quick mathematical calculations to determine range and azimuth. Given more time (30-45 minutes) a battery could "survey" and stake out its new firing position, enabling it to use more precise calculations to deliver more accurate fire missions.

³¹Richard H. Barnes, *Arracourt-September 1944* (Fort Knox, Ky.: U.S. Army Armor Center, 1982), pp. 39-40.

³²After-Action Reports of the 4th Armored Division, 29 July-30 September 1944, provided by Major General (Ret.) Bautz to the author, November 1995.

³³Dr. Christopher Gabel, *The 4th Armored Division in the Encirclement of Nancy* (Fort Leavenworth, Kan.: Combat Studies Institute, April 1986), p. 33.

³⁴Richard H. Barnes, p. 35-36.

³⁵Commanders and Staff of Combat Command A, 4th Armored Division, U.S. Army, *The Establishment and Defense of the Nancy Bridgehead* (Fort Leavenworth, Kan.: Military History-Battle Analysis, Combat Studies Institute, 1994), p. Lsn 3-2-19.

³⁶Richard H. Barnes, p. 35.

³⁷For examples of this evolution, from decentralized to centralized command and control, see Mellenthin, *Panzer Battles*, pp. 312-318. Also see Manstein, *Lost Victories*, pp. 538-543.

³⁸Richard H. Barnes, pp. 36-37.

³⁹Donald E. Vandergriff, "The Exploitation from the Dieulouard Bridgehead: An Example of Maneuver Warfare that Applies Today," in *ARMOR*, September-October 1995, pp. 6-9.

⁴⁰Discussions with General Donn Starry, USA (Ret.), 7 November 1997. General Starry was commander of Training and Doctrine Command, 1979-1982. General Starry was involved in the creation of AirLand Battle Doctrine, as well as writing more than 50 articles for various military journals on leadership, cohesion, and doctrine. General Starry also commanded the 11th Armored Cavalry Regiment in Vietnam, the U.S. Army Armor Center, U.S. Army V Corps, and U.S. Readiness Command.

⁴¹Gabel, *Encirclement of Nancy*, pp. 23-24; an analogy of the actions of the division with those of AirLand Battle.

⁴²Reconnaissance pull is where reconnaissance units find gaps in enemy defenses, or surfaces, and "pull" follow-on units through toward enemy weaknesses.

⁴³Baldwin, *Tiger Jack*, p. 26.

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Force XXI Planning Using the Maneuver Control System

by Captain Michael Dane Acord

The Maneuver Control System (MCS) and the Army Tactical Command and Control System (ATCCS) are integral parts of Force XXI initiatives. As a member of the 4th Infantry Division, I have tested these systems and their effects on our current doctrine and tactics, techniques and procedures (TTPs). I am writing this article for two reasons. First, I want to inform others in the Army that MCS works. There are marked advantages, with respect to planning, that the MCS and ATCCS brings to the fight. I will provide some TTPs using MCS that will enhance the brigade battle staff's planning process.

Second, I want to raise awareness of specific challenges MCS and ATCCS have to overcome before fielding in the 21st century. I am writing this article from the perspective of the brigade staff for current and future brigade staff members.

My opinion is based on my experience as a brigade plans officer in 2nd Brigade, 4th Infantry Division, from March 1998 to June 1999. This experience included the Maneuver Control System's initial operational testing and evaluation (IOT&E) and a corps-level Warfighter exercise, which fully integrated all our ATCCS systems. In addition to MCS training, I've attended many sessions of battle staff users training at our local training facility, and also have a working knowledge of other systems in the ATCCS suite. I am a user and have spent an inordinate amount of time exploring and testing all the functions on the MCS. Hence, I am one of perhaps 25 officers in the U.S. Army with *direct experience operating MCS in a field environment planning combat operations*. Unfortunately, I have had no exposure to Force XXI Battle Command Brigade and Below (FBCB2) or applique (during our testing the lower units were fed from a simulation).

ATCCS is a tactical computer network designed to facilitate command and control from corps through battalion. The Maneuver Control System (MCS) provides corps through battalion force level commanders and staffs the

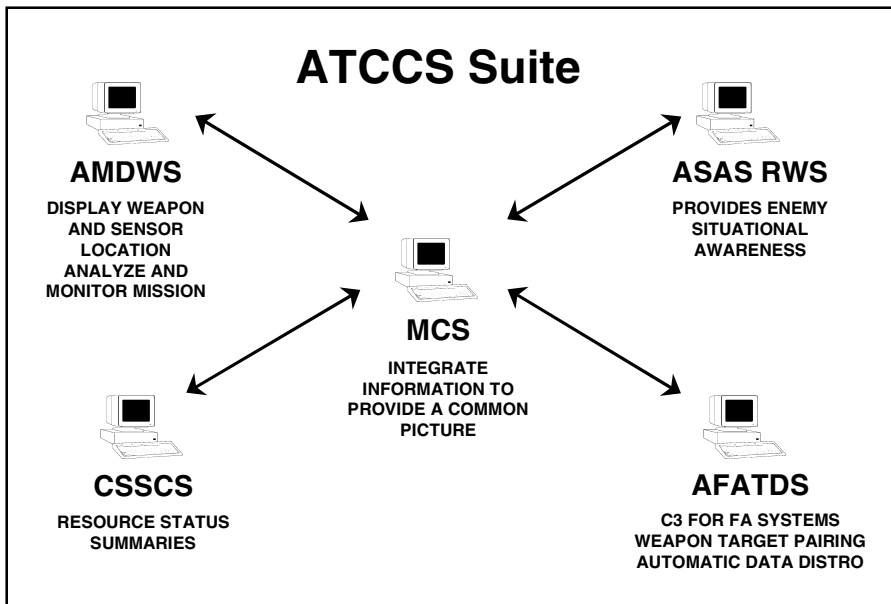
ability to collect, coordinate, and act on near-real-time battlefield information and to graphically visualize the battlefield. The All Source Analysis System (ASAS) provides battle commanders with analyzed intelligence and unanalyzed combat information. The Advanced Field Artillery Tactical Data System (AFATDS) provides command, control, and communications for the U.S. Army and Marine Corps cannon, rocket, missile, mortar, close air support, and naval surface weapons systems. The Air & Missile Defense Workstation (AMDW/S) provides the commander with the ability to electronically generate and display weapon and sensor locations, manipulate map graphics, conduct terrain analysis, and analyze and monitor missions in near real time. The Combat Service Support Control System (CSSCS) provides the commander with battlefield decision support and situational awareness for planning and controlling logistical support of combat operations. Additionally, there are several other complementary systems that perform specific functions that support ATCCS — e.g., Digital Topographic Support System (DTSS). All the systems in the brigade architecture communicate internally using a local area network (LAN) and externally using a router connected to our existing mobile subscriber equipment (MSE).¹

Although not originally designed as a planning tool, the MCS brings some marked advantages to the planning process. Its most significant effect on the process is the increased ability to share information horizontally and vertically on the digital battlefield (commonly called, but not limited to, parallel planning). Prior to the introduction of MCS and the digital network, information sharing was limited to the use of MSE and the TACFAX, and use of liaison officers (LNOs). These techniques could not convey concepts and graphics in a timely manner because the TACFAX is slow and indistinct, and LNOs had to travel sometimes 10-30 kms between their parent headquarters and the adjacent or higher unit. With MCS and the digital network,

units can now rapidly transfer information, orders, and graphics among other ATCCS units in a matter of seconds.

A TTP we used to enhance parallel planning was to “pull” division products during their MDMP. During the course of their process, they would produce WARNOs and products as outlined in *FM 101-5*. For example, our division conducted PowerPoint briefings to the commanding general for mission analysis, COA development and decision, and the OPORD. They also produced their synch matrix during the wargame. As soon as these briefings, events, and graphics were complete and saved to an MCS computer, my operators would “pull” that briefing, using the file transfer protocol embedded in the MCS software. This allowed me to utilize the same information (and slides) to inform the commander of ensuing operations. As we honed our TTPs, we were able to stay so close to the division that we once produced a full brigade order and issued it only one hour after the division released the division order. Conversely, as the BCT explored branches and sequels, I could share them (which included proposed graphics and sketches) with the division plans team in order to make recommendations involving the brigade's future missions. This does not, however, replace the need for liaison officers (LNO). The human ability to relate the commander's intent cannot be replaced, but by using the FTP, LNOs can rapidly exchange information higher, lower, and to adjacent units without traveling extended distances over the battlefield.

The MCS also has the ability to overlay some analysis products, allowing the commander to better visualize the battlefield. One such product, although still underdeveloped, is the terrain analysis tool. A TTP I used with the commander was to overlay a function called elevation bands onto our area of operations. Then I would zoom in to key terrain on the battlefield. The commander would use a laser pointer to issue guidance based on the picture I presented to him, and from there I could plan branches and sequels.



In fielding the MCS, the Army still faces many challenges. The most significant is that MCS units still have a need for analog products (paper order and plastic overlay). It is unrealistic to say that all units on the modern battlefield will be equipped digitally. Multi-national forces, National Guard units, and other non-digital units will likely be a part of our task organization. Additionally, commanders are reluctant to give up the “redundancy” of the paper map. Before the introduction of MCS and digital networks, staffs only had to focus on the production of one product. Even with only one product to produce, our staff struggled with time management during training and at the NTC. Imagine how long it would take to type every OPORD and Annex and make a digital drawing of the graphics, in addition to the analog product.

Currently, the brigade staff has to produce both products. For graphics, every graphic drawn on either our plastic overlay or on the MCS must be transferred manually (meaning grid by grid). Additionally, our division only provides MCS graphics, so the brigade is the “clearing house” for converting digital graphics to analog graphics. For orders, every product has to be typed. This prevents units from using matrix-type “fill in the blank” orders. With multiple products to produce, quality control becomes difficult. The MCS software must account for the seamless linkage of analog and digital products. I should be able to press a button and provide all products to non-ATCCS units. Software developers need to add functions to the MCS that give us the ability to print overlays at the scale of our choice. Our MTOE should continue to account for the analog requirement,

keeping copiers and diazos on the S3’s authorized property.

MCS and ATCCS face other challenges that must be overcome before fielding. One such challenge involves the map. The mapping software that MCS uses is not the same software the other ATCCS systems use, so overlays cannot be shared among all the ATCCS systems. The Army needs to agree on one map. I recommend that one map (a common database) be adopted, and all ATCCS use that map.

Another challenge crops up when operating with units that don’t have MSE capabilities (i.e., maneuver battalions). The MCS’s ability to rapidly transfer information is greatly hampered because non-MSE units use a combat net radio limited to a 14,400-baud modem to transfer and receive orders from higher. Our orders were normally about 40 pages and contained pictures using the embedded PowerPoint software. Microsoft Word documents transferred, but PowerPoint documents took an inordinate amount of time. The result was that information flow from brigade to battalion, with respect to operations orders, remained consistent with current techniques, the use of LNOs and runners. A better communications system must be developed so that maneuver battalions have equal capabilities to that of brigades and divisions to send and receive data. The Army should develop a “mini-SEN” housed in a single vehicle that would give the battalions the same capabilities the division has.

Also, the video monitor that comes with an MCS system is too small for integrated planning or execution. Units must use a video medium that is large

enough for all to see. The medium must also be “comfortable” for the commander to use for issuing guidance. We evolved to proximas and screens covered with Plexiglas. This allowed the commander to draw COAs directly onto a blowup of the area of operations. We also invested heavily in laser pointers. We should develop an interactive screen to allow the command to see, touch, and interact with the digital map, much the way he does with a paper map or whiteboard.

The MCS software is somewhat underdeveloped. The analysis tools are immature and need to provide more detail to the brigade and below. Some tools are also clumsy and not indicative of today’s technology. The MCS is currently not as user-friendly as most home computers. An intuitive, user friendly, soldier-system interface would ease the burden. We need to keep up, as much as possible, with today’s technology. This will allow new soldiers familiar with home computers to rapidly learn the Army’s systems.

In conclusion, when the entire ATCCS is operating, the system works well. The potential is still much greater than the performance, but we are at the point where potential is starting to meet performance. With respect to the military decision-making process, the MCS doesn’t alter doctrine. The process has not, and probably will not change. But it does greatly increase the speed at which information can be passed. With ATCCS and the MDMP, I recommend units take “baby steps.” Altering the commanders decision-making involves changing the way he thinks, so take it slow. In current operations, the ATCCS is an excellent way to have a common operational picture from corps to battalion, but if the conditions are not set during the planning process, the Maneuver Controls System’s ability to provide the commander a common operational picture will be limited.

Notes

¹Executive Overview briefing for the Army Battle Command and Control System given by Force XXI Training at Ft. Hood, Texas, dated January 1998.

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From the 1916 Fighting Vehicle Concepts Department:



Contemporary “artist’s conception” of the world’s newest weapon, the tank. Note the personnel claw for situations when ROE prohibits use of deadly force.

-- July-August 1986

What were we thinking?

A Collection of “Interesting” Ideas from ARMOR Magazine

We remember futurists like H. G. Wells, whose turn-of-the-century novels predicted rockets traveling to the moon and submarines 20,000 leagues under the sea, but we conveniently forget the predictions that didn’t quite work out. Alas, *ARMOR* carried its share of them over the years. As we muddle into a new millennium, perhaps it’s time to look back in the spirit of humility and explore some of the more humorous ideas. Remember, you never know, the future could still bring the world’s first, “solar-powered, flying submarine-tank, fully equipped with a 60-ton phonograph transmitter and personnel sniffer.”

From the 60-ton Phonograph Department:



This experimental vehicle allegedly provides a “listening” capability for the tank company. According to the “designer,” it can also be utilized in the anti-personnel role and has been known to spit huge balls of fire.

-- November-December 1973

From the 1986 Fighting Vehicle Concepts Department:

“Ideally, what is needed is an ‘Armored Individual Vehicle’ (AIV)... This will be a small wheeled vehicle, probably with a set of six hydrostatically-powered wheels. *However, to enable this vehicle to be a true cross-country vehicle, it will be equipped with two or three pairs of legs.* [Italics added] While this sounds like something out of ‘Star Wars,’ we suggest that this is not a new idea, but was originally tried back in the fifties, but proved to be somewhat uncontrollable. The main reason for the problems encountered at that time was very simple: it takes about two years to learn to walk, using only two legs. The human operator, using mechanical controls and with practically no feedback, had no chance of mastering those mechanical legs and the project was dropped. With the emergence of computers and microprocessors as powerful tools, the idea was revived and there are now several experimental vehicles using this kind of locomotion.”

-- November-December 1986

From the Weapons Procurement Department:

FUTURE TANK REQUIREMENT

We know exactly what we want. Take the single item of the tank: our requirements are simple. We want a fast, highly mobile, fully armored, light-weight vehicle. It must be able to swim, cross any terrain, and climb 30-degree hills. It must be air-transportable. It must have a simple but powerful engine, requiring little or no maintenance. The operating range should be several hundred miles. We would also like it to be invisible.

General Bruce C. Clarke
-- September-October 1960

From the Bad Headlines Department:

When an atomic weapon hits your battalion,
round up the men who can still function.
Take tactical action. Sympathize with your medics.
It is time for worry and for action, but it is
No Time for Despair!

--May-June 1956

From the Town and Country Department:

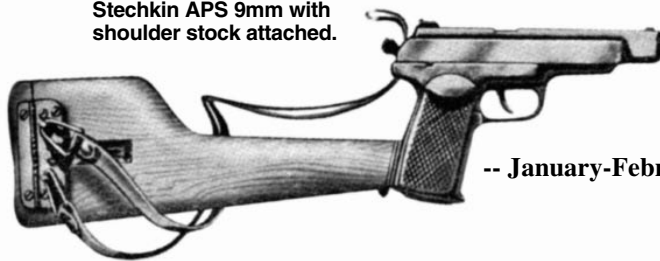
The M48 can move with gracious deliberation through any society.



-- January-February 1967

From the M16 Replacement Department:

Stechkin APS 9mm with
shoulder stock attached.

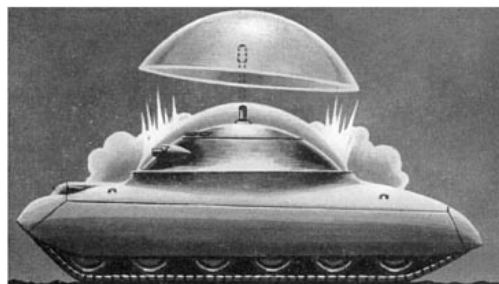


-- January-February 1966

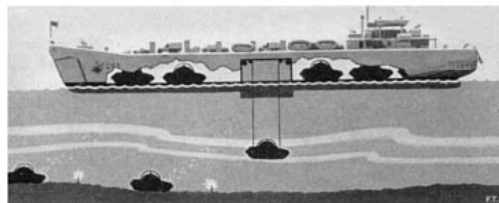
From the Ideas for the Marines Department:

UNDERSEA TANK

Technical engineers have designed an undersea tank of the future for amphibious operations. Still in the blueprint state, it is designed to overcome underwater obstacles and carry the punch against shore strong points in the critical initial phases of a landing. The illustrations below are from *Mechanix Illustrated Magazine*, and show the steps in landing the tank from the point offshore to arrival at beach.



The underwater tank blows off its plastic bubble top on reaching land.



Unloading offshore for the underwater approach, a submarine on tracks.



Arms are 105mm recoilless, flame thrower and machine guns, turret mounted.



Arms are 105mm recoilless, flame thrower and machine guns, turret mounted.

-- January-February 1951

From the "I'd Rather Be Fishing" Department:



NEW TRIPLE THREAT VEHICLE

Lockheed's TerraStar amphibious vehicle is shown following successful mud, water, and hard surface operation tests. Developed by Lockheed Aircraft Service Company, TerraStar's outstanding feature is its capability to perform well in all three of these principal environments. An advanced locomotion concept permits TerraStar to move easily through mud and swamp-land, paddle through water, and operate as a conventional wheeled vehicle on roads and other hard surfaces. Commercial applications include oil and mineral exploration, remote site construction, rescue and salvage operations, mapping and survey work, and fire-fighting operations.

-- May-June 1967

From the "War in 1974" Predictions Department:



(Drawing by Lieutenant Colonel Rigg)

The Sky-Cavalrymen can be saved by their emergency rocket-ejected parachutes that lower them to safety from their flying platforms and aerial assault jeeps.

-- May-June 1958

From the Italian Confidence Course Department:



This Bersagliere somersaulting through a ring of fire shows the result of rigorous training and self-confidence.

-- March-April 1961

In an advanced stage of training, a Bersagliere trooper leaps to a somersault over the bare bayoneted rifles.



From the "Kill Me" Platform Department:



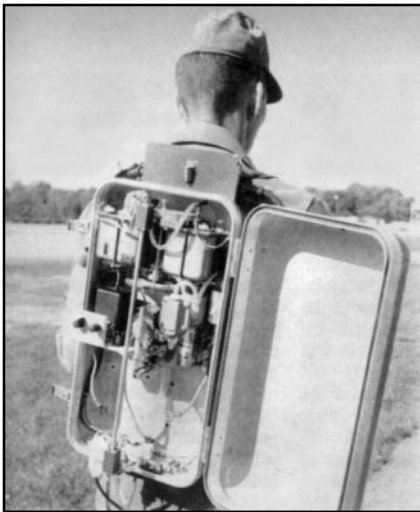
-- May-June 1958

This is the Army's experimental one-man helicopter, known as the Aerocycle.

From the Soldier Sniffer Department:



Front view of the Man Pack Prototype Chemical Personnel Detector with M16 Rifle.



Internal view of the Man Pack Personnel Detector revealing the simplicity of design.

-- September-October 1966

More from the Bad Headlines Department:

When in Doubt — Fire!!!

-- March-April 1988

From the Advice I Want To Hear Department:

“The first and most obvious countermeasure [to sleep deprivation] is napping. Soldiers should take naps at every opportunity... *Leaders must nap, setting the example for their troops.* Keep in mind that individuals need more sleep if they get it by napping than if the sleep is uninterrupted.”

-- September-October 1994

From the Night Operations Department:



The Sun-Powered Helmet Radio.

-- July-August 1957

Finally, from the Fixin' What Ain't Broke Department:

“The purpose of this article is to discuss the way we shoot. Don't get me wrong — I believe in fire commands wholeheartedly. I just don't think we are using the right ones...”

Let's start with the alert. Why say, GUNNER!?

I don't know. Why not say, TANK!? That will get my attention real quickly and it combines the alert and description elements all in one.

The next element is ammunition. Once again, why? Let's scrap it....

ON THE WAY would be replaced with FIRE!, because it is quicker and not as difficult for soldiers whose native language is not English.

A standard fire command would now sound like this:

Commander: TANK!

Gunner: OK!

Loader: UP!

Commander: FIRE!

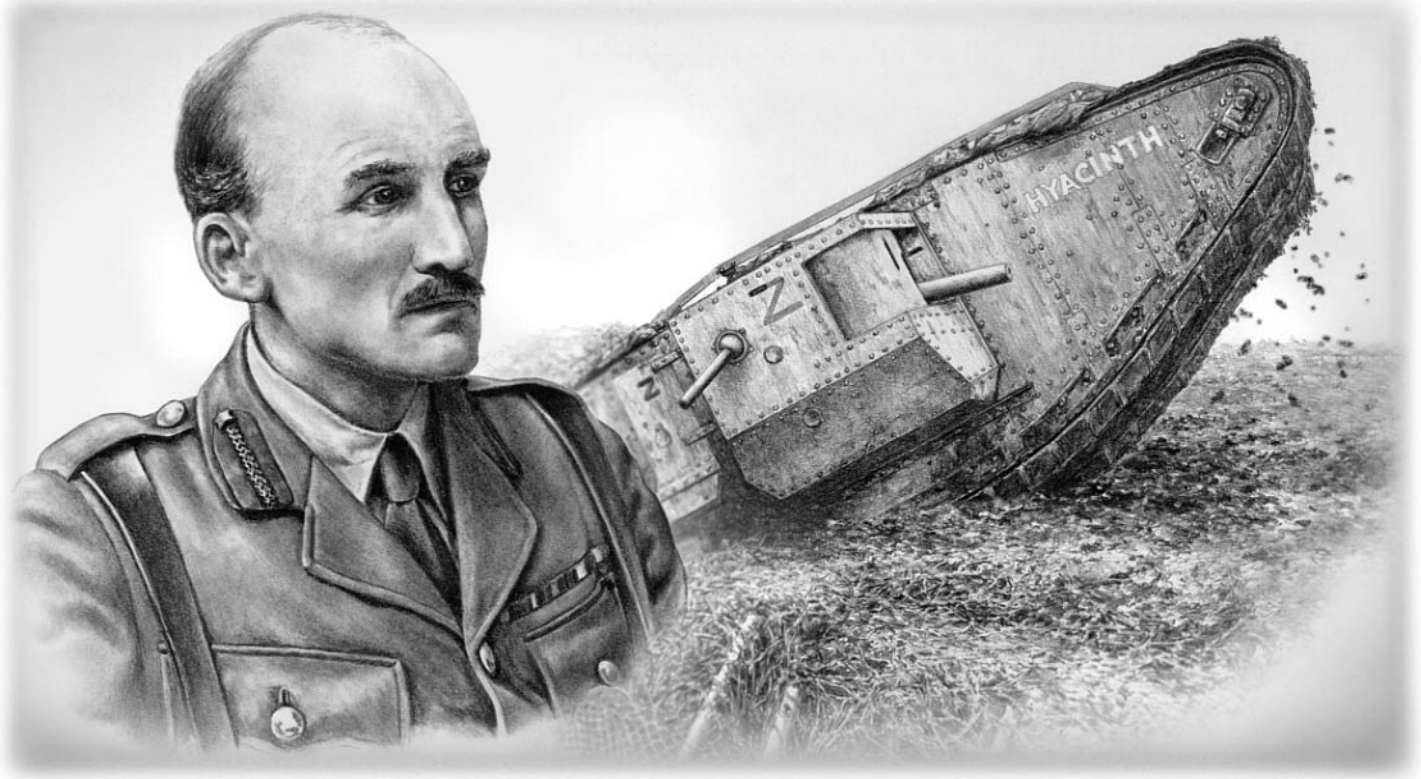
Gunner: FIRING!

....To sum up, I believe that we need to drastically change the way we shoot. To continue doing it the way we are because we have always done it this way is not a viable reason. Tanks work differently and more quickly now. With the UCOFT, our crews are getting much faster and need a usable system like I have outlined here.

I'm not asking for permission to use abbreviated fire commands more often. I am recommending a new system, a quantum leap in efficiency. All it will take is for the Chief of Armor to read this article and say to the Weapons Department, “You know, this sergeant is right. Let's shorten up our fire commands and quit this Stone Age gunnery. I want this to be in effect in one year.” Then we will quit this longwinded gunnery and have fire commands that keep up with the most sophisticated fire control system our Army has ever had.”

-- May-June 1988

The preceding photomontage was compiled by 2LTs Jackson Eaton, William DelBagno, and Scott Hausauer, graduates of Princeton University, West Point, and Buffalo State College of New York, respectively.



The Battle of Cambrai

by Captain Kristofer Aillsieger

Just after dawn on the morning of 20 November 1917, without any preparatory bombardment, nearly 400 British tanks concentrated on a six-mile front, crossed the line into no-man's land, advancing towards the French town of Cambrai. This innovative attack, designed to break the stalemate that characterized the Western Front during the First World War, was the first attack by massed tank formations in history. It was the first time since their invention that tanks were employed as their developers originally envisioned, and it marked the birth of modern tank doctrine.

The attack was the inspiration of Lieutenant Colonel J.F.C. Fuller, the Chief of Staff of the British Tank Corps.¹ For the entire year since the tank's debut at the Somme in 1916, he and the Tank Corps commander, General Hugh Elles, had chafed at the piecemeal manner in which the tanks were being employed on the battlefield. Fuller and Ellis spent a great deal of time studying the tank's performance, noting the strengths and

weaknesses, and developing methods for maximizing the former and minimizing the latter. However, they couldn't get the field commanders to follow their advice. Both men believed that mass and surprise were the key elements to achieving decisive results with the tank. They felt that if given the opportunity to deploy the tanks in massed formations as the primary attacking force, over relatively unbroken ground, with little or no preparatory bombardment, they could prove the validity of this doctrine. Then Fuller hit on the idea of staging a raid on Cambrai.

The idea was originally a small scale raid — a surprise attack over good ground to prove what the tanks could do when properly employed. However, as the higher commands became involved, the plan was transformed into a large scale offensive. By the time the attack began, it involved six infantry divisions, five cavalry divisions (in reserve), and a spearhead of three tank brigades supported by over 1,000 artillery guns and 14 air squadrons.²

The location of the attack, the area between the towns of Cambrai and St. Quentin, had been carefully chosen by Fuller because it had seen little fighting. The open, rolling ground had not been churned up by artillery fire and attacking troops, and was relatively firm and solid. This would give the tanks their first chance to operate over unbroken ground.

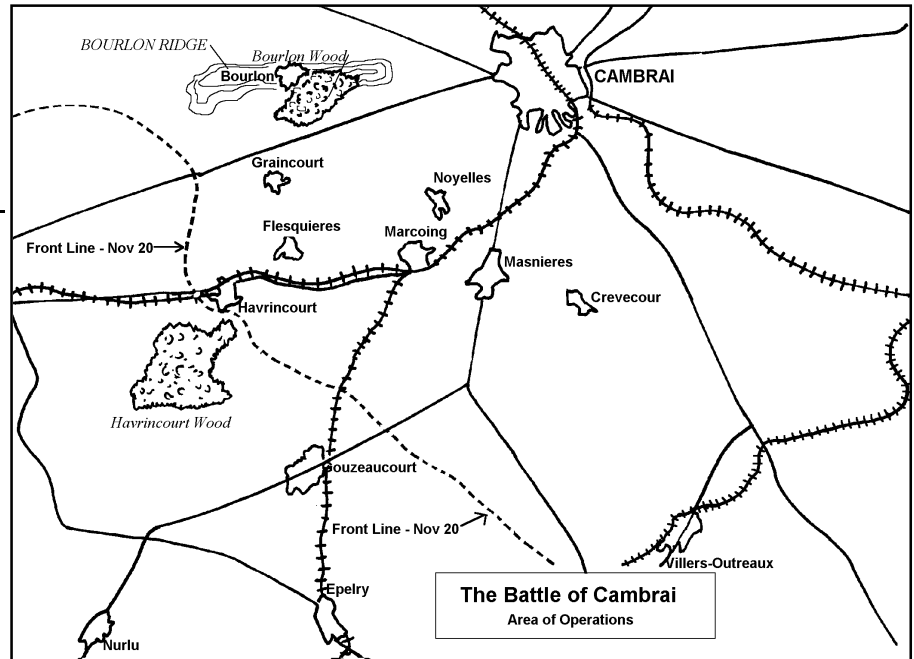
There were two key terrain features which dominated the avenues of approach to Cambrai, the Flesquieres ridge and Bourlon Hill. The Flesquieres ridge was located roughly in the center of the planned advance, while Bourlon was in the north. The plan was to capture these two key terrain features with the tanks and infantry in order to allow the cavalry to pass between them and take Cambrai. The town itself was of only minor importance, being a center of textile production before the war. However, four main railways passed through it, providing a major supply conduit for the German front line armies. Capturing it would break the Ger-

man's supply line and put the British in position to exploit the breakthrough in several directions.

Between the British lines and Cambrai lay a German defensive belt that was five and a half miles deep. It consisted of three defensive lines — the Hindenburg Main Line, the Hindenburg Support Line, and the Beaurevoir-Masnieres-Marcoing line. These trench systems had been constructed to take maximum advantage of the rolling terrain, using the ridges and spurs to hide portions of the defensive lines. The trenches had been built much wider than usual — up to 16 feet — and each trench system was preceded by dense barbed wire obstacles at least 50 yards deep. Concrete dugouts with massed machine gun batteries covered the avenues of approach.³

Manning these defenses were the soldiers of the German Second Army. These troops were of generally good quality and included some who had recently arrived from the Russian Front. However, this area of the front was regarded by the Germans as a rest zone for battle-weary troops because of the strong defensive structure.⁴

To break through these formidable defensive lines, Fuller devised a special method of attack.⁵ Because the trenches were too wide for the tanks to cross, each tank was outfitted with a fascine, a bundle of wood that could be dropped into the trenches to make a bridge. Fuller dictated that the tanks would be organized into sections of three machines that would work together. The lead tank was to advance through the enemy's wire, flattening it for the infantry, and then, upon reaching the first trench, turn left and fire into it to suppress the defenders. The following two tanks would then advance and one would drop its fascine into the trench and both would cross over. The one that had dropped its fascine would then turn left and work down the trench from the back side, while the other would advance to the next trench line, drop its fascine, turn left and suppress the defenders in that trench. The first tank would then cross over both trenches, and go on to the third trench line with its own fascine to use as a bridge there. The tanks were to be closely followed by infantry organized



into three sections as well; one to mark the path cleared by the tanks, one to clear the trenches, and one to garrison the trenches.

With this plan approved, a date was set and the forces were moved into position. Because surprise was an essential element of Fuller's plan, the tanks were moved in secrecy, mostly at night, to concealed positions near their start points. Also, in sharp contrast with previous attacks, there would be no preparatory artillery bombardment.

The attack began as planned at 6:20 a.m. on 20 November. A thousand artillery guns opened fire, raining high explosives and shrapnel on the German positions and shrouding the battlefield with smoke.⁶ Simultaneously, the tanks moved out. The historic battle was underway.

The tanks' initial advance was quite successful. According to Trevor Wilson, "In the opening stages the progress of the attack proved irresistible."⁷ He goes on to describe the advance:

"Followed by their columns of infantry, the tanks rolled ponderously onward through what the enemy had assumed was impregnable barbed wire. Then they reached trenches supposedly too deep and broad to allow their transit, unloaded their fascines, 'dipped their noses in, and came up and over.' While their enfilading fire harried the trench dwellers, the British infantry moved in to complete the conquest."⁸

One of the tank commanders, Captain D.G. Browne, gave the following account of the opening stages:

"The immediate onset of the tanks was overwhelming. The German outposts, dazed or annihilated by the sudden deluge of shells, were overrun in an instant. The triple belts of wire were crossed as if they had been beds of nettles, and 350 pathways were sheared through them for the infantry. The defenders of the front trench, scrambling out of the dug-outs and shelters to meet the crash and flame of the barrage, saw the leading tanks almost upon them, their appearance made the more grotesque and terrifying by the huge black bundles they carried on their cabs. As these tanks swung left-handed and fired down into the trench, others, also surmounted by these appalling objects, appeared in multitudes behind them out of the mist. It is small wonder that the front Hindenburg Line, that fabulous excavation which was to be the bulwark of Germany, gave little trouble. The great fascines were loosed and rolled over the parapet to the trench floor; and down the whole line, tanks were dipping and rearing up and clawing their way across into the almost unravaged country beyond. The defenders of the line were running panic stricken, casting away arms and equipment."⁹

All along the front, the attack met with success. By 8 a.m., the tanks and infantry had overrun the Hindenburg Main Line, and by 11:30 a.m. they had taken the Hindenburg Support Line in most places.¹⁰ The attack was proceeding extremely well in all aspects, with one notable exception: Flesquieres.

The ridge near the village of Flesquieres, with its commanding view of the countryside, was the most impor-

tant objective of the center of the attack. It dominated the approaches to Cambrai and hid part of the Hindenburg Support Line behind it. The responsibility for taking this objective was given to the 51st Highland Division, an experienced and well respected unit. Its commander, General Harper, however, did not have much faith in the tanks.¹¹

Contrary to Fuller's instructions, he ordered his infantry to keep well behind the tanks.¹² Furthermore, because the initial advance went faster than expected, he ordered a one-hour delay before continuing on to the Hindenburg Support Line in order to remain on schedule.¹³ This gave the Germans time to move their field batteries to more mobile positions on the reverse slope of the ridge. From that position, they were able to engage the tanks of the British elements advancing on both the north and south, knocking out 11 of them before they moved out of range.¹⁴ This, however, was not the worst of it for the British.

When Harper ordered his forces to continue the advance, they were completely unaware of the German field batteries on the other side of the ridge. Keeping with his instructions, the infantry let the tanks advance well ahead of them. The tanks advanced up the slope, cutting their way through the wire obstacles, with the infantry some four hundred yards behind. As they crested the top of the ridge, they came face to face with the German batteries. Silhouetted against the skyline, the tanks made perfect targets for the German gunners. With no infantry support, the tanks were sitting ducks, and 16 were destroyed before the German guns were themselves put out of action. This single event delayed the entire advance and caused the loss of 27 tanks to four German field guns.¹⁵

Moreover, the German resistance was stiffening. After the initial shock of the attack, the Germans regrouped and rushed all available forces to meet the onslaught. The infantrymen facing the tanks soon learned methods to disable them. By shooting through the lookout slits, they could injure or kill the crewmen, and by bundling grenades together and throwing them under the tracks, they could render a tank immobile.¹⁶ These tactics, born of desperation, proved to be effective in slowing the British advance.

Still, the tank attack had, in the first day, achieved great success. The Brit-

ish Army had advanced nearly five miles, something months of infantry fighting had failed to accomplish. During the night, the Germans abandoned Flesquieres, and when the second day of the offensive dawned, the British were still advancing. However, the new day would not prove so fruitful for them.

To begin with, they had 179 fewer tanks on the second day — the casualties of both enemy fire and mechanical breakdown.¹⁷ Also, it had begun raining during the night and the continuous drizzle kept most of their air support grounded. Finally, they were hampered by their own success on the previous day. Many of the commanders in the rear had not expected such spectacular results and they were slow to respond with additional orders. Communications with the troops and tanks at the front proved more difficult than expected and there were significant delays in getting troops moving.

Once underway, the British found the German resistance to be getting stronger and stronger. Their advance progressed much more slowly, but by mid-afternoon, they had captured the town of Fontaine, only two miles from Cambrai. But this marked the high point of their advance. Strong German resistance slowly ground the advance to a halt all across the front, and the especially determined defense of Bourlon Hill and Bourlon Wood defeated every British attack. With Bourlon Hill still in German hands, the British were unable to reinforce the handful of troops at Fontaine or continue the advance to Cambrai. At the end of the day, Sir Douglas Haig, commander of the British Expeditionary Force, decided to halt the advance and concentrate on consolidating their gains and capturing Bourlon Hill.

On the 22nd, after a full day of fighting, the British did manage to capture Bourlon Hill and the village of Bourlon, but they could advance no further. The three days of fighting had worn out the tank crews and their machines. The men were all in need of rest and most of the tanks needed repairs. The infantry soldiers were tired as well, and there were no reserves to continue the attack. Haig called an end to the offensive.

Although they had not reached their objectives, the British commanders were pleased with the operation. The tanks had achieved successes that were unprecedented in the two years of trench warfare on the Western Front.

Unfortunately, though, the British counted their successes too early, and were unprepared for the German counterattack which came on November 30th. Using high-speed infiltration tactics, with little artillery preparation, the Germans quickly penetrated the British lines and recaptured much of the ground they had lost. Within a few days, the German counterattack had basically nullified the gains made by the British, although the lines shifted somewhat, with the British gaining some ground in the north, the Germans gaining some in the south.

Despite this later reversal, the Battle of Cambrai has gone down in history as a great success for the tank as a weapon. It proved the effectiveness of massed tanks supported by infantry in penetrating enemy defenses. With its combination of mobility, protection, and firepower, the tank proved itself to be an effective and powerful weapon, and it soon became a mainstay of modern armies. While it was not immediately grasped by many military leaders at the time, Cambrai was a demonstration of the future of warfare.

Notes

¹Bryan Cooper, *The Battle of Cambrai*, (New York: Stein & Day, 1968) 64-65.

²*Ibid.*, 68.

³The foregoing description of the terrain and defenses was drawn primarily from Cooper, 68-70.

⁴Trevor Wilson, *The Myriad Faces of War*, (Cambridge: Polity Press, 1986) 488.

⁵Cooper, 78-79. See also Philip J. Haythornthwaite, *The World War I Source Book*, (London: Arms and Armour Press, 1992) 97.

⁶Wilson, 489.

⁷*Ibid.*, 490.

⁸*Ibid.* (Quoting "Cambrai", Part 4, *Royal Tank Corps Journal*, July 1936: 69).

⁹Cooper, 100. See also Martin Gilbert, *The First World War: A Complete History*, (New York: Henry Holt and Company, 1994) 379. Neither Cooper nor Gilbert provide a pinpoint cite for the quote, but its original source is apparently *The Tank in Action* by Captain D.G. Browne (London: William Blackwood, 1920).

¹⁰Wilson, 490.

¹¹Cooper, 113. General Harper's dim view of tanks, and subsequent mishandling of them is confirmed in John Keegan, *The First World War* (New York: Alfred A. Knopf, Inc., 1999) 370-371.

Continued on Page 39

Editor's Note: This essay won the third 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."



Leadership in the XXI Century — Digital Age

by Major James K. Morningstar

*"Leadership ...is the thing that wins battles."*¹

- GEN George S. Patton, Jr.

Victory in the digital age, more than ever before, requires leaders who can make bold and quick decisions. New technology delivers unprecedented volumes of information to front line commanders, burdening them with a rapid operational tempo. Only leaders who quickly convert information into decisive action can fully realize the potential of this applied science. These leaders, however, will find that digital technology makes unique demands on the human dimensions of leadership. To meet future needs for bold and decisive leaders, the Army must change its current methods of leader development and begin to seek out and reward junior leaders who take risks.

Army doctrine defines leadership as: "...the process of influencing others to accomplish the mission by providing purpose, direction, and motivation."² This process begins with decision-making. Leaders identify what must be done and then provide others with the reason and motivation to do it. They inspire others through time-honored traits such as experience, physical endurance, judgment, "uprightness and cleanliness of character."³ They build cohesive and efficient teams by establishing standards, enforcing discipline, and conducting challenging training. Above all else, leaders are counted on to know what to do. The essence of

leadership remains unchanged, but the dawning century will reveal shining opportunities and shadowy challenges to leadership new to battle.

The Army foresees "...future information technology will greatly increase the volume, accuracy, and speed of battlefield information available to commanders."⁴ This technology allows greater fidelity in addressing the true nature of combat. Battle is not a predictable unfolding of events along lines in time and space. Battle is not linear, but rather plays itself out in sequences of decision points immune to predetermined direction. Historic command and control systems could not hope to redirect combat power faster than conditions changed in this chaotic system. Leaders were forced to decide direction in advance and apply combat power in a linear fashion against conditions as they hoped to find them (with frequent pauses to adjust to reality). Digital technology will provide the leaders at the decision points with the information and means necessary to address conditions as and when they find them. This does not, in and of itself, equate to greater combat effectiveness, for knowledge does not equal action. Rather, as Robert Leonhard observed, "Information breeds decisions."⁵ It is leaders who translate information into combat power — they make decisions.

The importance of decision-making is more of a remembrance than a revelation. Among the fifty-year-old principles of Army leadership is "Make

sound and timely decisions." Doctrine adds, "You must be able to rapidly assess situations and make sound decisions. If you delay or try to avoid making a decision, you may cause unnecessary casualties and fail to accomplish the mission. Indecisive leaders create hesitancy, loss of confidence, and confusion. You must be able to anticipate and reason under the most trying conditions and quickly decide what actions to take."⁶ The revelation is in understanding that future technology actually increases the importance and difficulty of decision-making and leadership.

Digital technology places unsuspected challenges on leadership. In his analysis of U.S. Army operations in Somalia, Mark Bowden found "Men in battle drink up information like water."⁷ With digital technology, those men drink from a fire hose. A flood of information can drown some leaders' ability to make decisions. Bowden continued, "...Soldiers fought better when things were going their way. Once things turned, it was harder to reassert control."⁸ Perfect situational knowledge leads to perfect frustration when events go awry. Leadership, not technology, changes the direction of events. As S.L.A. Marshall observed more than thirty years, "There are no computers in the jungle. And if there were, they wouldn't help."⁹

Digital technology can, perversely, isolate leaders from the fight. In Mogadishu, the commander "...and his staff probably had more instant information

about this unfolding battle than any commander in history, but there wasn't much they could do but watch and listen."¹⁰ During a "digital rotation" at the National Training Center, I witnessed a battalion employing a digital mobile command post in the defense. While the commander watched his bank of monitors inside the command post, his sergeant major stood outside and watched enemy tanks skirt the battalion's forward positions. When asked what his commander knew of the enemy's maneuver, the sergeant major said, "If he'd get off that damn Nintendo and come out here, he'd see!" As General Sherman said many years before, "No man can properly command an army from the rear, he must be 'at its front'."¹¹ The telegraph, telephone, and radio did not alter this rule, and neither will digital connections. It is old doctrine: "Decision-making must ultimately rely upon the commander's judgment based upon his personal observation of the battlefield."¹²

In assessing future operations, the U.S. Army's Training and Doctrine Command acknowledges the limits of technology and the importance of decision-making: "Despite advances in information technology, commanders, leaders, and soldiers will never have perfect knowledge of the operational situation surrounding them. Yet, due to the pace and complexity of future battle, commanders, more so than in the past, must accept uncertainty and not hesitate to act instead of waiting for more analysis or information."¹³ The best technology will not motivate men forward in dangerous and uncertain circumstances. Only leadership, that ability to make a decision and move out, can cut the fog of war. As General George C. Marshall noted, "The great difficulty is observing the execution, and pushing it at the weak point and getting it ahead."¹⁴

Ironically, the more prominent computers become in battle, the more important becomes the human bond between leaders and their soldiers. J.F.C. Fuller wrote, "The more mechanical become the weapons with which we fight, the less mechanical must be the spirit which controls them." In the midst of the great mechanical revolution of World War II, General George S. Patton Jr. eloquently observed, "Wars may be fought by weapons, but they are won by men. It is the spirit of the men who follow and the man who

leads that gains victory." When operations follow computer guidance, soldiers will only follow leaders. Soldiers know computers don't care. Only leaders, as General Dennis Reimer says, "... know their soldiers' strengths and weaknesses. This is the key to success."¹⁵

The digital battlefield challenges leaders to motivate soldiers in a torrent of information. General Marshall illustrated how leaders motivate soldiers in a confused, rapidly moving battle, rife with information on the situation, in recalling Patton at Strausburg in 1945. Marshall said, "He [Patton] interviewed several commanders. In each case they, in accordance with their training, began to tell him about enemy movements. They were doing what they were taught. But this was a great emergency. Everything was in confusion. In each case, Patton would interrupt and say, 'I don't want to know a goddam thing about the enemy. What are you doing?' This changed their psychology. It was a perfect example of leadership."¹⁶ Finding his soldiers searching for accurate information, Patton sought action. Digits will not transmit this will to win. That is the leadership required in tomorrow's battles.

Today, the Army's challenge is to produce tomorrow's leaders. The "digital age" demands quick decisions by leaders at the front who can see into the souls of soldiers and inspire them in the face of danger and uncertainty. Some of these traits can, as the Army believes, "... be learned through self-study, education, training, and experience." Some can only be revealed.

To make quick decisions in ambiguous circumstances, a leader must take risks. Unfortunately, the Army has little toleration for such leaders. Because tight training budgets often limit leaders to a single maneuver or gunnery exercise during a rating period, only those who avoid mistakes get high ratings. A bad rating will haunt even the newest lieutenant for the rest of his career. Command goes to those who, through choice or nature, avoid mistakes by avoiding risks. While the future demands decisive leaders, the present environment produces passive types.

This climate is cyclic in Army history. During the 1840s and 1850s, men who sought safe duty enjoyed meteoric Army careers. In 1853, for example,

one young officer prone to avoid risk refused to enter unexplored areas of wilderness despite his mission to survey territory in the Pacific northwest.¹⁷ This refusal did not harm George McClellan's rise to the top of the Army. When later confronted with the unexpected on campaign in Virginia in 1862, McClellan lost his nerve, his battles, his campaign, and many men's lives. He proved over-dependent on (faulty) intelligence and lacked the ability to make decisions when faced with uncertainty. In peacetime, that liability wasn't as important to promotion as other, more aesthetic, characteristics.

Talk with today's junior leaders and you will find suspicions that the Army is again promoting "lack of failure" over bold decision-making. They feel the same systemic constraints noted by Roger H. Nye a decade ago:

"... the power of the company commander has been denigrated by modern communications, by theories of management that have moved much of the company administration to higher headquarters, and by centralized systems of pay, promotion, training, maintenance, and supply that bypass the commander's authority and impact directly on the soldier below him. It is possible for a captain of average ability to be quite successful in the eyes of higher authorities if he faithfully obeys, enforces standards set by others, and does not violate some cardinal rules of leadership and management. This is good followership, but it is not command."¹⁸

In the 1990s, LTG Stroup added, "...studies and surveys confirm that something in the Army environment is changing. We hear anecdotal accounts of careerism, stifled initiative, lack of trust of subordinates and a growing *zero defects* mentality ... the shift has been subtle and unconscious."¹⁹

In such an environment, it is virtually impossible to groom and assess the decision-making abilities of junior leaders. So instead we promote photographs, PT scores, and "lack of failure" in one's record. We reward only those slavishly faithful to the rules, but as General Grant said, "If men make war in slavish observance of rules, they will fail."²⁰ Any officers ambitious for higher command seem to make "a career out of their own careers rather than a career out of leading their units."²¹

Cambrai

from Page 36

There is little doubt that today's Army would promote McClellan and send Grant and Sherman back to civilian life.

Our Army has historically waited until the fighting starts to replace passive peacetime leaders with bolder decision-makers. Famous first defeats, like Kasserine Pass, served as wake-up calls. We should not wait to apply Major General Ernest Harmon's after-action observation from Kasserine, "Up to the time of battle itself, we are inclined to stress administration, paperwork, and tactical knowledge above the flair for leadership. In this we are wrong...."²² The precision, lethality, and tempo of the next first battle could make the consequence of poor leadership unimaginably disastrous. We *must* have bold, decision-making leaders in place when the first shot is fired.

Today, we often hear the mantra of digitization echoing like a chant to ward off the specter of future defeat. While technological developments in rapid shared communications and precision weapons are tremendous combat multipliers, they are not a warranty for victory. To succeed on the future battlefield, the Army must develop decisive leaders today. Tomorrow's battles will be characterized by rapidly flowing information in a fast-paced, uncertain, and lethal environment. Today's Army must encourage and reward leaders who can take risks and make quick, bold decisions in fast-paced and ambiguous circumstances. It is this leadership that continues to be "the thing that wins battles."

Notes

¹GEN George S. Patton, Jr., in a letter to his son, 16 Jan 1945.

²FM 22-100, *Military Leadership* (Headquarters, Department of the Army, Washington, D.C.; 31 July 1990) p. 1.

³These are the four traits Theodore Roosevelt used to describe General Leonard Wood when he asked him to lead the Rough Riders. See "Raising the Regiment" from *The Essential Theodore Roosevelt*, ed. John Gabrielle Hunt, (Gramercy Books, N.Y., 1994) p. 48.

⁴TRADOC Pamphlet 525-5, *Force XXI Operations*, 1 Aug 1994, p. 1-5.

⁵Robert Leonhard, *The Art of Maneuver* (Presidio Press, Novato, Calif., 1991) p. 119.

⁶See FM 22-100, *Military Leadership*.

⁷Mark Bowden, *Blackhawk Down*, (Grove Atlantic, Inc., 1999) p. 55.

⁸Ibid.

⁹S.L.A. Marshall, in a speech, "Problems in Combat Leadership," to CGSC Class at Ft. Leavenworth, 3 Dec 62.

¹⁰Bowden, p. 20.

¹¹FM 22-103, *Leadership and Command at Senior Levels*, (Headquarters, Department of the Army, Washington, D.C.; June 1987) p. 15.

¹²FM 25-4, *How To Conduct Training Exercises* (Headquarters, Department of the Army Washington, D.C.; 10 Sep 1984).

¹³TRADOC Pamphlet 525-5, *Force XXI Operations* (Headquarters Department of the Army Washington, D.C.; 1 Aug 1994) p. 3-4.

¹⁴George C. Marshall, *Interviews and Reminiscences for Forrest C. Pogue*, Larry I. Bland, ed. (George C. Marshall Research Foundation, Lexington, Va., 1991) p. 450.

¹⁵GEN Dennis J. Reimer, "Leadership for the 21st Century: Empowerment, Environment, and the Golden Rule" in *Military Review*, (Jan-Feb 96), pp. 4-9.

¹⁶Marshall, pp. 547-548.

¹⁷See "McClellan's Life before 1860" in *The Peninsula Campaign* by David G. Martin (Combined Books Inc., Conshohocken; Pa. 1992) pp. 24-26.

¹⁸Roger H. Nye, *The Challenge of Command* (Avery Publishing Group Inc., Wayne N.J., 1986) p. 26.

¹⁹LTG Theodore Stroup, "Leadership and Organizational Culture: Actions Speak Louder than Words" in *Military Review*, Jan-Feb 96, p. 44.

²⁰Quoted by Nye, p. 28.

²¹Douglas Kinnard's observation of the officers during the Viet Nam War from his book, *The War Managers* (Avery Publishing Group Inc., Wayne N.J., 1985) p. 112.

²²Quoted by Douglas MacGregor in *Breaking the Phalanx* (Center for Strategic and International Studies, Washington D.C.; 1997) p. 159.

MAJ James K. Morningstar is a 1983 graduate of the U.S. Military Academy. His assignments include tank platoon leader and company XO in 3d AD in Germany; REFORGER 88 Planning Group; S4, 1/4 Cav, Ft. Riley, Kan.; commander, D Co, 3-37 AR in the Gulf War; observer/controller with the Brigade Staff Trainer Team at the NTC; Army Liaison Officer and J51 Plans Officer for COMSECONDFLT/COMSTRIKFLTLANT/CJTF 120; and S3, 1-8 Cav, Ft. Hood, Texas, including deployment to Bosnia for peace-keeping operations. Currently, he is the XO, Department of Military Science, University of Virginia.

¹²Ibid., 114.

¹³Ibid.

¹⁴Ibid., 116.

¹⁵Ibid., 117.

¹⁶Ibid., 120.

¹⁷Wilson, 490.

Bibliographical Note

Most of the information for this article came from Bryan Cooper's book *The Battle of Cambrai*, (New York: Stein & Day, 1968). Most general texts on World War I give the Battle of Cambrai only a few pages of coverage. I tried to confirm information drawn from Cooper, at least generally, with one or more other sources. Below is a list of additional sources I consulted which provide general information about the battle:

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Scheduled Services: A “Pay Me Now or Pay Me Later” Proposition

by CW3 Kevin L. Cox, Sergeant First Class Joseph N. Pishner Jr., and Lieutenant Colonel Peter D. Utley

Editor’s Note: Space considerations forced us to greatly reduce the size of the illustrations accompanying this story. But you can download full-size versions in Excel spreadsheet form on the ARMOR Magazine website at www.knox.army.mil/armormag/so00indx.htm.

A successful maintenance program within a battalion and its companies has many components. These range from command involvement, to trained operators, to an effective and efficient maintenance management system. The one critical component this article will address is the scheduled service program. Without a first-class, dedicated, scheduled service program, a unit will become consumed with unscheduled maintenance and the attitude “that it just doesn’t matter, because it will break anyway.” The result is putting a Band-Aid on a problem requiring major surgery. For this reason alone, it is essential for commanders at the battalion and company level to commit the resources to make scheduled services a planned training event, rather than an afterthought or just another requirement to be met.

The program described is built around an M1A1 armor battalion, but it has application in any armored unit, even units with a wheeled vehicle fleet. The 2nd Battalion, 63rd Armor (“Lions”) do not take full credit for the program described in this article. The 1st Infantry Division Master Gunner received it from the USAREUR Master Gunner in the summer of 1999 and provided it to all battalions in the division as a sample. The battalion took the format of the 8-day program, extracted portions of it to include the format, and applied its 13-day service program model (Figure 1).

Commander’s Guidance

In designing the 13-day service program, the maintenance leaders of the Lion Battalion applied their commander’s guidance. The battalion’s scheduled service program for tanks will:

- Be comprehensive.
- Provide time for crewmembers and mechanics to “pay attention to detail.”
- Be a living document.
- Be the first category of training event applied to the battalion’s training calendar after the higher headquarters’ requirements are applied.
- Provide an opportunity for first-line leaders to train their soldiers.
- Maximize the precious resource of time.
- Involve key members (master gunners and the maintenance technician) who are often consumed doing other tasks.
- Be preventive in nature by anticipating problems and looking for trends.
- It will have a system where quality control and quality assurance (QA/QC) exist.

Before describing the unique aspects of the program as they relate to the commander’s guidance, it is important to provide some background information on the fleet and the program. The 44 tanks in the battalion are 10+ years in age. The average tank has between 5,500-6,000 miles on it. The battalion instituted its 13-day service program in July 1998 and has been using it to date. No tank in the battalion has missed a scheduled service since this program was instituted. A company has one platoon, and possibly a headquarters tank, in service at one time.

Company maintenance teams are kept at full strength within the battalion. Other sections of the battalion maintenance platoon will go short personnel before a company maintenance team does. Mechanics are excused from the duty roster for the published service period shown on the battalion training calendar. A tank platoon crewmember’s place of duty is the service line. The only training events in which they are allowed to participate are physical training and gunnery training in UCOFT. The service program as described in this

Service Schedule													
VEHICLE	0	1	2	3	4	5	6	7	8	9	10	11	12
___ 6	D0	H1	H2	H3	H4	H5	CO	T1	T2	T3	T4	T5	DF
___ 7	D0	H1	H2	H3	H4	H5	CO	T1	T2	T3	T4	T5	DF
___ 8	D0	T1	T2	T3	T4	T5	CO	H1	H2	H3	H4	H5	DF
___ 9	D0	T1	T2	T3	T4	T5	CO	H1	H2	H3	H4	H5	DF
___	D0	T1	T2	T3	T4	T5	CO	H1	H2	H3	H4	H5	DF

COORDINATION NOTES:

- * COMPLETE OPERATOR PMCS AND DISPATCHING OF THE TANK DURING THE LAST MAINTENANCE PERIOD BEFORE THE SCHEDULED SERVICE START DATE. THIS WILL FACILITATE THE ACCOMPLISHMENT OF DAY 0 TASKS.
- * ENSURE SUSPENSION SYSTEMS ARE CLEANED AFTER THE ROAD TEST AND BEFORE RETURNING THE TANK TO THE MOTORPOOL FOR THE DAY 0 TECHNICAL INSPECTION (TI). RUN THE TANK THROUGH THE WASHRACK TO CLEAN THE SUSPENSION SYSTEM.
- * THE GOAL FOR DAY 0 TECHNICAL INSPECTIONS IS ALL TANKS COMPLETING HULL TI AND TURRET TI ON TANKS GOING INTO HULL SERVICE. TANKS SCHEDULED FOR TURRET SERVICE WILL COMPLETE TURRET TI ON DAY 1 OF TURRET SERVICE.

Figure 1

article has undergone three revisions, but the 13-day model has remained consistent.

Applying the Commander's Guidance

The service program is comprehensive in nature because it services everything from the individual soldier to the tank. Major areas serviced include individual and crew-served weapons, NBC equipment, ancillary equipment, communications equipment, mine plows, mine rollers, and the tank's hull and turret. A unique aspect of the program is the dedication of a full day to each of the following areas: weapons, NBC equipment and ancillary equipment, and the individual soldier. This precludes the possibility that critical nodes, like the NBC room and arms room, are not overloaded at any one time. If a company headquarters tank is being serviced with a platoon, a maximum of three crews will be servicing their equipment at one of the two critical nodes on identified days in the schedule. Individual soldier readiness for the soldiers of the platoon in service is performed on Day 7 (Changeover Day) (See Figure 8) under the control of the company first sergeant, assisted by the company medic and a representative from the battalion S1 section.

The -20 Technical Manual for the tank provides the requirements for an M1A1 to be serviced annually and semiannually. From these requirements, most units allocate 5-7 working days for this task. Our battalion's experience and vehicle performance will show this is completely inadequate. Crewmembers and mechanics need the time to work the "attention to detail" shortcomings on a tank. Taking this approach will save many hours of unscheduled maintenance because the little things often lead to big problems. How many times do you see vehicles come into service with deferred shortcomings and depart the service with the same and even more shortcomings being deferred? Give the welder time to tap bolts and weld. Give the crew time to steam clean, scrub, and spot paint the engine compartment. Give the mechanics time to secure loose cables, tape bare wires, and execute each step of the service. Give the service team chief time to inspect and perform quality control over the service. Give the battalion maintenance technician (BMT) and battalion motor sergeant (BMS) time to look for unusual wear or trends. Pride in your equipment and a little tender loving care goes a long way towards maintenance success.

Assessments and feedback are important aspects of training and leadership. They are also essential to an effective service program. Each day of the service ends with a nightly service huddle involving the key maintenance leaders. This includes the BMT or battalion motor officer (BMO), company executive officer, company maintenance team chief, service team chief, platoon leader, and platoon sergeant. Periodically, the

		VEHICLE				
DAY 0		6	7	8	9	QA/QC
1	SAFETY BRIEFING					PL OR PSG
2	B, D, A, W & M PMCS IAW TM-10 and 5988-E are Completed					TC
3	Dispatch Vehicle					TC
4	Road Test Vehicle					TC AND MECHANIC
5	Mechanics Start Technical Inspection IAW TM-20 Service Section to Include Identification of New Welding/Tapping Requirements and Update Vehicle Welding Matrix					SERV TM CHIEF
6	Check Specific Gravity of Each Cell in Each Battery and Record Readings on Enclosed BATTERY CELL READING MATRIX					SERV TM CHIEF
7	Required Job Orders Prepared					SERV TM CHIEF
8	Coordinate with BMO for Welder Support Schedule					CO MNT TM CHIEF
9	Identified Parts Annotated, NMC Parts Ordered					SERV TM CHIEF
10	Install New Parts					TC
11	Tag Parts Awaiting Other Parts and Return to PLL					TC
12	Clean Work Environment, Dispose of Waste/HAZMAT Materials					CO MNT TM CHIEF
13	Conduct Nightly Service Huddle, Prepare for Next Day					CO XO

Figure 2

		VEHICLE				
TURRET DAY 1		6	7	8	9	QA/QC
1	SAFETY BRIEFING					PL OR PSG
2	Complete TM-20 Level Technical Inspection to Include Identification of New Welding/Tapping Requirements and Update Vehicle Welding Matrix					SERV TM CHIEF
3	Change Hydraulic Reservoir Filter USE HULL SEMI-ANNUAL KIT (HYDRAULIC FILTER MANIFOLD: PN5705135)					SERV TM CHIEF
4	Inspect and Service Elevation Mechanism USE HULL SEMI-ANNUAL KIT (KIT, FILTER ELEMENT: PN5911304)					SERV TM CHIEF
5	Inspect and Service Traverse Mechanism USE HULL SEMI-ANNUAL KIT (KIT, FILTER ELEMENT: PN5911304)					SERV TM CHIEF
6	Change Turret Distribution Filters USE HULL ANNUAL KIT (DAMPENER-FLUID: PN12273464)					SERV TM CHIEF
7	Inspect All Turret Wiring Harnesses/Assemblies					SERV TM CHIEF
8	Clean Work Environment, Dispose of Waste/HAZMAT Materials					CO MNT TM CHIEF
9	Conduct Nightly Service Huddle, Prepare for Next Day					CO XO

Figure 3

		VEHICLE				
TURRET DAY 2		6	7	8	9	QA/QC
1	SAFETY BRIEFING					PL OR PSG
2	Inspect Hull and Turret Ammunition Doors/Safety Switch/ Hardware					SERV TM CHIEF
3	Clean All Ammo Wells and Storage Racks					SERV TM CHIEF
4	Inspect and Service Turret Lock Assembly					SERV TM CHIEF
5	Inspect and Service Turret Race Assembly					SERV TM CHIEF
6	Drop Breech Block					SERV TM CHIEF
7	Clean and Service Breech Block Assembly					SERV TM CHIEF
8	Clean and Service Collimator USE HULL SEMI-ANNUAL KIT (SERVICE KIT M.R.S.: PN12961043)					SERV TM CHIEF
9	Punch Gun Tube and Replace Seals USE HULL SEMI-ANNUAL KIT (CUSHION: PN9377334) USE HULL SEMI-ANNUAL KIT (O-RING: PN12312058, MS9021-371)					SERV TM CHIEF
10	Inspect and Service Bore Evacuator					SERV TM CHIEF
11	Crew Services Recoil Mechanism IAW page 2-369, TM-10					SERV TM CHIEF
12	Perform Recoil Exercise IAW Appendix I, TM-20					SERV TM CHIEF
13	Clean Work Environment, Dispose of Waste/HAZMAT Materials					CO MNT TM CHIEF
14	Conduct Nightly Service Huddle, Prepare for Next Day					CO XO

Figure 4

battalion executive officer and company commander attend. The focus of the service huddle is to determine what has been accomplished to date and what is programmed to be performed during the next 1-2 days of the service. You could refer to it as a "synch meeting." It is a very important daily meeting, because it prevents surprises, maximizes resources, and enables critical maintenance decisions relative to service to be made. It gives the leaders the ability to set the conditions and prepare for the next day's activities with respect to resources (tools, diagnostic equipment, supplies, parts, personnel, etc.). At the completion of the service, the battalion commander chairs a service after-action review (AAR) with the same key maintenance leaders who attend all or selected nightly service huddles.

TURRET DAY 3		VEHICLE				QA/QC
		6	7	8	9	
1	SAFETY BRIEFING					PL OR PSG
2	Inspect and Service Commander's Weapon Station Hatch					SERV TM CHIEF
3	Inspect and Test Smoke Grenade Launchers					SERV TM CHIEF
4	Purge and Charge All Sights (GPS, GPSE, CWS, Unity Periscope) and LRUs DESICCANT GPS: PN9377106 KIT LRF: PN5705155					SERV TM CHIEF
5	Purge, Charge, and Leak Check LRF					SERV TM CHIEF
6	Purge, Charge, and Leak Check ICU					SERV TM CHIEF
7	Inspect and Sensor Crosswind Sensor					SERV TM CHIEF
8	Inspect Thermal System					SERV TM CHIEF
9	Inspect 120mm Cannon Assembly					SERV TM CHIEF
10	Inspect Breech Contact Group and Replace Spring USE HULL SEMI-ANNUAL KIT (SPRING: PN12529740)					SERV TM CHIEF
11	Inspect and Service Breechring Contact Group					SERV TM CHIEF
12	Perform Prep-To-Fire Checks and AACs Record on Enclosed AAC WORKSHEET					CO MG
13	Inspect and Service NBC System. If Date Stenciled on the Canisters (Primary and Secondary) is Older Than 2 Years, Replace the Filters. Update the Date Stencil on the Canisters if Filters are Replaced. USE NBC FILTERS (PRIMARY): 4240-01-161-3710 USE NBC FILTERS (BACK-UP): 4240-00-828-3952 USE NBC FILTER (SQUARE): 4240-00-866-1825					SERV TM CHIEF
14	Clean NBC System Particle Separator with Compressed Air from the Inside to the Outside, Wipeout Standing Water and Dirt from the NBC Sponson Box					SERV TM CHIEF
15	Check Air Pressure at Crew Stations with Air Flow Tester, Should Read 18 CMFS.					SERV TM CHIEF
16	Replace NBC Sponson Box Seals, 4 Each, Cut to Fit USE SEAL: PN 12345800-1					SERV TM CHIEF
17	Clean Work Environment, Dispose of Waste/HAZMAT Materials					CO MNT TM CHIEF
18	Conduct Nightly Service Huddle, Prepare for Next Day					CO XO

Figure 5

TURRET DAY 4		VEHICLE				QA/QC
		6	7	8	9	
1	SAFETY BRIEFING					PL OR PSG
2	Clean, Service, and Inventory Crew Served Weapons Crew Served Weapon Cleaning Kits M2 and Spare Barrel Loader's M240 and Spare Barrel Gunner's M240 and Spare Barrel					CO ARMORER
3	Clean, Service, and Inventory Individual Weapons Individual Weapon Cleaning Kits Driver's M9 and Magazines Loader's M9 and Magazines Gunner's M9 and Magazines Tank Commander's M9 and Magazines Crew M16A2 and Magazine Crew M16A2 and Magazine					CO ARMORER
4	Clean and Service NVDs and Ancillary Equipment Loader's AN/PVS-7B Tank Commander's AN/PVS-7B Driver's AN/VVS-2 PLGR Loader's Binos Tank Commander's Binos MBD Anderson Device Vehicle First Aid Kits Combat Lifesaver Bag					CO ARMORER
5	Update Weapon Responsibility Statements and Cards					CO 1SG
6	Clean Work Environment, Dispose of Waste/HAZMAT Materials					CO MNT TM CHIEF
7	Conduct Nightly Service Huddle, Prepare for Next Day					CO XO

Figure 6

TURRET DAY 5		VEHICLE				QA/QC
		6	7	8	9	
1	SAFETY BRIEFING					PL OR PSG
2	Clean and Service NBC Equipment Driver's M42A2 Loader's M42A2 Gunner's M42A2 Tank Commander's M42A2 M13 DAP AN/VDR-2 M256 Kit M274 Marking Kit IM-93 M8 and M9 Paper M8A1					CO NBC NCO
3	Clean, Service, and Inspect BII and Update Handreceipt					CO SUPPLY SGT
4	Inspect, Clean, and Service Vehicle Communications System to Include the ANCD and Vehicle Battery Bag					CO COMMO SGT
5	Inspect, Clean, and Service Ground Communications Equipment					CO COMMO SGT
6	Inspect, Clean, and Service CVCs					CO COMMO SGT
7	Inspect and Service Mine Plow or Mine Roller					SERV TM CHIEF
8	Dispatch Vehicle for Road Test					TC
9	Clean Work Environment, Dispose of Waste/HAZMAT Materials					CO MNT TM CHIEF
10	Conduct Nightly Service Huddle, Prepare for Next Day					CO XO

Figure 7

The intent of the AAR is to provide feedback on any maintenance trends (positive and negative) observed during the service and to solicit recommendations on any required adjustments to the service program. Making your subordinates a part of the process gives them a sense of ownership. Every battalion has smart soldiers; give them the opportunity to express themselves and share their ideas.

Adding scheduled services to the Battalion Training Plan at the end of the annual training plan development process is a recipe for disaster. Instead, build your training plan around the scheduled services. The most efficient way to accomplish this is by scheduling the services on the calendar after the higher directed events have been posted. Using the 10 percent variance (18 days), the services can then be slid left or right to accommodate the desired battalion-level field training events. When you examine the amount of available training time, when balanced against the 13-day model, company-level field training opportunities are limited. Platoon-level field training is not a problem from the resource perspective of time. In USAREUR, company-level field training is normally associated with a CMTC rotation (a higher directed event) due to training area availability and suitability. The 13-day model requires a significant investment of time and detailed training management (planning), but it is most definitely worth the investment.

We can all agree maintenance is training. A few examples of how training is embedded into the model include Armament and Accuracy Checks (AAC), weapon services, and Preventive Maintenance Checks and Services (PMCS) before the two road tests. Having the crews perform the AAC during the service requires them to conduct prep-to-fire checks and bore-sight the tanks — great tasks to sustain as a part of gunnery training and proficiency. After a crewmember completes the service on a weapon, have him perform the TCGST tasks for the M240 and the M2, more great sustainment tasks for gunnery. In the 1st Infantry Division, crewmembers (operators) receive an annual certification by their first-line leader on their ability to perform a proper PMCS. The service program allows this certification to occur either during the Day 0 or Day 13 PMCS prior to the respective road test. Make sure your leaders record the performance of these tasks in their Leader Books, so they can accurately track proficiency and frequency of training. These are but a few representative examples of how maintenance is truly training.

Time is the one resource we always seem to lack. Time is a precious commodity, but it is often wasted. By using a "batch and stack" or "leveraging" approach to our activities, we are better able to accomplish more tasks in a given

period of time. Many of our requirements are periodic or cyclic in nature. By aligning requirements or tasks in time and space, you can potentially accomplish more with the available resources at hand. You are also saving time in terms of overhead, set-up and tear-down time, for each task. Some examples include the performance of the recoil exercise during the service, which meets the semiannual requirement, or screening the soldiers' pre-deployment packets (PDP), getting shots, and completing personnel and administrative actions as they relate to soldier readiness, which meets other semiannual requirements. You can argue that you will still have to do these things because you are not doing every soldier or tank in the company or the battalion. But you are saving time. Instead of blocking out an entire day to perform recoil exercises on your company, or spending a day sending 63 soldiers to PDP, you are doing it by exception or by unit/element; therefore, other units/elements have the ability to perform other tasks. An asymmetrical approach, versus a symmetrical approach to planning your companies' activities, will allow you to accomplish more with the available resources. During services, you, as leaders, have a very attentive audience. Account for your soldiers and keep them on task.

Frequently, we use our most experienced and knowledgeable maintenance professionals to perform tasks that could be handled by someone less specialized. How often is the BMT or BMS chasing parts? How often is your company master gunner at the Training Support Center (TSC) scheduling or obtaining training aids, devices, simulations, and simulators (TADSS) or executing administrative requirements for the first sergeant? These are maintenance-smart soldiers, and their minds are a terrible thing to waste. They

DAY CHANGEOVER	VEHICLE				QA/QC
	6	7	8	9	
1	CTA-50 Inventory				CO SUPPLY SGT
2	CTA-50 Direct Exchange (DX)				TC
3	Initial Inventory Issue				CO SUPPLY SGT
4	Phone Roster Updated				PSG
5	Shot Records Updated				CO MEDIC
6	HIV Test Verified				CO MEDIC
7	Soldier Physical Verified				CO MEDIC
8	Soldier Pay Verified				PSG
9	BAQ/VHA Verified				PSG
10	SGLI Verified				BN PAC NCO
11	Personal Data Sheet Updated				PSG
12	Power of Attorney Verified/Completed				PSG
13	Will Verified/Completed				PSG
14	Inspect and Verify PDP Packet for Completeness				CO 1SG
15	Key Control Update				CO 1SG
16	Confirm Individual Weapon Qualification Status				CO 1SG
17	Conduct Nightly Service Huddle, Prepare for Next Day				CO XO

Figure 8

know what right looks like. They have the ability to visualize a train wreck before it happens. They greatly assist the commander in making sure the proper standard is being applied. They have the ability to train as they apply their expertise. The BMT and BMS can work with the mechanics and the master gunner can work with the crewmembers on gaining a deeper understanding of the tank. Again, maintenance is truly training! The feedback they provide is critical to the overall readiness of the unit. Our Army has spent a great deal of money training them; we need to maximize their knowledge by involving them in the scheduled service process.

Anticipating maintenance problems sounds very difficult, but by listening to what other units are saying as well as what your maintenance professionals are saying, the task becomes more manageable. Understanding what caused the maintenance failure, rather than just fixing the problem with a part, will allow you to see if you have a bigger problem. During the scheduled service, close attention is paid to components or parts and how they wear or why they failed. From this, the BMT and the company maintenance team chief are able to identify possible trends within the battalion's fleet. Other great sources of information concerning trends and solutions to the problems are the *PS Magazine*, maintenance messages, and the Field Problem Review Board (FPRB) Report. Taking this information, the battalion confirms or denies if it has the identified trend. All trends are treated the same in terms of fixing the problem. If a trend exists within the fleet, the corrective action is applied. A determination is made to apply the corrective action during a command maintenance period, if it requires no major maintenance activity (i.e., pulling a pack), or wait until the next scheduled service. Regardless, each tank is tracked to ensure no vehicle is missed. Frequently, the trend is then translated into a step in the service and, if required, parts are added as additional battalion required parts. The current service program's additional parts are listed on the Day Final Checklist (See Figure 14). Many of the additional parts are seals and bolts associated with the high heat areas of the engine and the exhaust. The battalion also uses both the semi and annual service kits during each semiannual service. This has reduced the number of engine failures, because the air induction system in the tank is serviced every six months. Tailor-

HULL DAY 1	VEHICLE				QA/QC
	6	7	8	9	
1	SAFETY BRIEFING				PL OR PSG
2	Prep for Hull Services				SERV TM CHIEF
3	Pull Rear Deck				SERV TM CHIEF
4	Remove Power Pack				SERV TM CHIEF
5	Remove and Service Batteries, Load Test Batteries				SERV TM CHIEF
6	Drain and Change Final Drive Oil				SERV TM CHIEF
7	Inspect Engine Compartment and Powerpack for Damage and Any Leaks				SERV TM CHIEF
8	Complete TM-20 Level Technical Inspection to Include Identification of New Welding/Tapping Requirements and Update Vehicle Welding Matrix				SERV TM CHIEF
9	Inspect Engine and Transmission Cooling System				SERV TM CHIEF
10	Inspect All Exhaust Seals and Oil Cooler Seals				SERV TM CHIEF
11	Inspect Oil Lines				SERV TM CHIEF
12	Clean Exhaust Duct Elbow				SERV TM CHIEF
13	Inspect Exhaust Duct and Exhaust Duct Gasket				SERV TM CHIEF
14	Inspect Generator Access Cover Gasket				SERV TM CHIEF
15	Inspect Exhaust Duct Exhaust Seal, Rotate 180 Degrees if Worn, If Seal is Completely Unserviceable, Replace Seal and Screws USE SEAL NONMETALLIC: NSN 5330-01-320-3692 USE SCREW CAP: NSN 5305-00-988-7794				SERV TM CHIEF
16	Replace Grille Door Bolts (Annual Requirement, Check Last Service Packet to Determine if Replacement is Required) USE GRILLE DOOR BOLTS: NSN 5305-01-130-1665				SERV TM CHIEF
17	Inspect Both Right Angle Drives				SERV TM CHIEF
18	Inspect Propeller Shafts				SERV TM CHIEF
19	Inspect PTO Seals and Housings				SERV TM CHIEF
20	Inspect and Service Trans/Axial Fan Assembly				SERV TM CHIEF
21	Clean Work Environment, Dispose of Waste/HAZMAT Materials				CO MNT TM CHIEF
22	Conduct Nightly Service Huddle, Prepare for Next Day				CO XO

Figure 9

ing the service program to meet the unique needs of your fleet, without sacrificing the basic service outlined in the TM -20, will keep you ahead of the unscheduled maintenance power curve.

As you look at your battalion's MTO&E, you probably won't find any positions identified as quality control supervisor or quality assurance inspector, but we all know these are essential functions. How do you organize your company service team to accommodate or resource these requirements? In the Lion Battalion, a company maintenance team takes the shop foreman and makes him the service team chief. He performs quality assurance for the service. Each tank in hull service gets a hull mechanic and each tank in turret service gets a turret mechanic assigned to it. In addition, the tanks in hull service have the senior hull mechanic supervising the hull mechanics and the same responsibilities are given to the senior turret mechanic for the service of the turrets. These two noncommissioned officers perform quality control of their respective portions of the service. This organization for the service requires 7, possibly 8, personnel from the authorized 10 in a company maintenance team. The BMT and BMS perform quality assurance of the entire service with particular emphasis on the conduct and the results of the technical inspections on Day 0 and Day Final. The same concept of quality control and quality assurance is applied by the platoon sergeant (quality control) and the company NBC NCO, company armorer, and company first sergeant (quality assurance) for the other areas of the service. You can have the greatest plan in the world, but success still revolves around the execution. Dedicating personnel to perform quality control and quality assurance will ensure you are executing to standard.

The Details

Taking the commander's guidance, the checklists shown in Figures 2-14 were developed, and they describe the 13 days of the program. These same checklists are used by maintenance leaders and mechanics during the service.

The checklists for each day of the service contain standard tasks to be accomplished during most of the service days. These include safety briefs, work area cleaning, and the nightly service huddle. Selected tasks in the service have the parts kits from the annual or semi-annual service kits or the additional battalion service parts associated with the particular step of the service. This prevents the situation when parts are not applied because a mechanic may not know

		VEHICLE				
HULL DAY 2		6	7	8	9	QA/QC
1	SAFETY BRIEFING					PL OR PSG
2	Change Engine Oil Filter USE OIL FILTER KIT: NSN 4330-01-118-2868					SERV TM CHIEF
3	Change Transmission Oil Filter USE OIL FILTER KIT: NSN 2520-01-204-2585					SERV TM CHIEF
4	Change Primary, Secondary, and Last Chance Filters USE HULL SEMI-ANNUAL KIT (FUEL FILTER SERVICE KIT: PN5705134)					SERV TM CHIEF
5	Clean and Service Fuel Nozzles USE HULL SEMI-ANNUAL KIT (SERVICE KIT: PN12312058, PN12284708, PNM83248/1-241)					SERV TM CHIEF
6	Steam Clean Engine Compartment					SERV TM CHIEF
7	Clean and Service Battery Compartment					SERV TM CHIEF
8	Steam Clean Powerpack Assembly to Include Oil Coolers					SERV TM CHIEF
9	Service Left and Right Oil Coolers					SERV TM CHIEF
10	Replace Left and Right Oil Cooler Seals USE OIL COOLER SEAL R/S: NSN 2930-01-102-3491 USE OIL COOLER SEAL L/S: NSN 5330-01-393-2605					SERV TM CHIEF
11	Replace Exhaust Duct Gasket (Annual Requirement, Check Last Service Packet to Determine if Replacement Required) USE GASKET: NSN 5342-01-317-1446 USE SHORT BOLT: NSN 5305-00-727-6804 USE LONG BOLT: NSN 5340-01-171-4736 USE WASHERS: 5310-00-281-6347					SERV TM CHIEF
12	Replace Generator Access Cover Gasket (Annual Requirement, Check Last Service Packet to Determine if Replacement is Required) USE GASKET: NSN 5330-01-101-5065 USE BOLT: NSN 5306-00-637-8723 USE WASHER: 5310-01-369-5648					SERV TM CHIEF
13	Inspect All Quick Release Pins; i.e., Brake, Steering, Parking Brake					SERV TM CHIEF
14	Service Cooling and Scavenger Fan Shafts and U-Joint Assemblies					SERV TM CHIEF
15	Clean Work Environment, Dispose of Waste/HAZMAT Materials					CO MNT TM CHIEF
16	Conduct Nightly Service Huddle, Prepare for Next Day					CO XO

Figure 10

		VEHICLE				
HULL DAY 3		6	7	8	9	QA/QC
1	SAFETY BRIEFING					PL OR PSG
2	Clean and Service V-Packs and Precleaner Assembly USE HULL ANNUAL KIT (SEAL: PN12287512)					SERV TM CHIEF
3	Clean Plenum Box					SERV TM CHIEF
4	Pull V-Packs, Blow V-Packs, Weigh V-Packs, and Record Readings on Enclosed V-PACK WEIGHT MATRIX. Replace V-Packs if They do not Meet the Criteria in the TM-20.					SERV TM CHIEF
5	Service Personnel Heater USE HULL SEMI-ANNUAL KIT (PERSONNEL HEATER FUEL FILTER KIT: PN57052) USE HULL SEMI-ANNUAL KIT (PERSONNEL HEATER FUEL PUMP SERVICE KIT: PN5705207) USE HULL ANNUAL KIT (WATER SEPARATOR KIT: PN5705484)					SERV TM CHIEF
6	Install Batteries USE HULL SEMI-ANNUAL KIT (KIT, BATTERY: PN5705143)					SERV TM CHIEF
7	Replace Fuel Cap Vents, 4 Each USE HULL SEMI-ANNUAL KIT (SERVICE KIT, FUEL CAP: PN10582)					SERV TM CHIEF
8	Perform Fire Extinguisher Test					SERV TM CHIEF
9	Test PPI System					SERV TM CHIEF
10	Clean Work Environment, Dispose of Waste/HAZMAT Materials					CO MNT TM CHIEF
11	Conduct Nightly Service Huddle, Prepare for Next Day					CO XO

Figure 11

		VEHICLE				
HULL DAY 4		6	7	8	9	QA/QC
1	SAFETY BRIEFING					PL OR PSG
2	Ground Hop Powerpack					SERV TM CHIEF
3	Perform Engine Test Using and Record Readings on Enclosed ECU J1/BOB CONVERSION CHART					SERV TM CHIEF
4	Lube Vehicle IAW LO-9-2350-264-LO					TC
5	Inspect and Service the EAPU USE SEMI-ANNUAL SERVICE KIT: NSN 2815-01-383-7316					SERV TM CHIEF
6	Clean Work Environment, Dispose of Waste/HAZMAT Materials					CO MNT TM CHIEF
7	Conduct Nightly Service Huddle, Prepare for Next Day					CO XO

Figure 12

		VEHICLE				
HULL DAY 5		6	7	8	9	QA/QC
1	SAFETY BRIEFING					PL OR PSG
2	Set Powerpack					SERV TM CHIEF
3	Inspect, Torque, and Mark Sprocket, Roadwheel, and Track Assembly Bolts/Nuts					SERV TM CHIEF
4	Drain Road Wheel and Compensating Idler Arm Hub Oil, Replace Oil, and Replace Plug (Annual Requirement, Check Last Service Packet to Determine if Replacement is Required) USE PLUG PROTECTIVE: NSN 5340-01-128-9554					SERV TM CHIEF
5	Clean Work Environment, Dispose of Waste/HAZMAT Materials					CO MNT TM CHIEF
6	Conduct Nightly Service Huddle, Prepare for Next Day					CO XO

Figure 13

		VEHICLE				
DAY FINAL		6	7	8	9	QA/QC
1	SAFETY BRIEFING					PL OR PSG
2	Validate Crew Members Ability to PMCS Vehicle					TC
3	Road Test Vehicle					TC
4	Final Technical Inspection					SERV TM CHIEF
5	Close-out Dispatches					TC
6	Clean Work Environment, Dispose of Waste/HAZMAT Materials					CO MNT TM CHIEF
7	Complete Service Packets, Verify Service Checklists, Order Parts, Verify Job Orders, File All Paperwork: Verify 2408-4, 5988-E					CO XO
8	Service AAR					BN XO
9	Reorder Service Kit and Additional Battalion Required Parts					CO MNT TM CHIEF
SEMI	HULL SEMI-ANNUAL KIT (NSN 2540-01-255-3347)					1 EACH PER TANK
SEMI	HULL ANNUAL KIT (NSN 4330-01-117-7943)					1 EACH PER TANK
SEMI	ENGINE OIL FILTER KIT (NSN 4330-01-118-2868)					1 EACH PER TANK
SEMI	TRANSMISSION OIL FILTER KIT (NSN 2520-01-204-2585)					1 EACH PER TANK
SEMI	OIL COOLER SEAL R/S (NSN 2930-01-102-3491)					1 EACH PER TANK
SEMI	OIL COOLER SEAL L/S (NSN 5330-01-393-2605)					1 EACH PER TANK
SEMI	GRILLE DOOR BOLTS (NSN 5305-01-130-1665)					2 EACH PER TANK
SEMI	NBC SYSTEM SPONSON BOX SEAL (PN 12345800-1)					20 FT PER TANK
SEMI	EAPU SEMI-ANNUAL SERVICE KIT (NSN 2815-01-383-7316)					1 EACH PER TANK
ANN	GASKET HEAT DUCT (NSN 5342-01-317-1446)					1 EACH PER TANK
ANN	BOLT (SHORT) (NSN 5305-00-727-6804)					11 EACH PER TANK
ANN	BOLT (LONG) (NSN 5340-01-171-4736)					6 EACH PER TANK
ANN	WASHER (NSN 5310-00-281-6347)					17 EACH PER TANK
ANN	GENERATOR ACCESS PLATE GASKET (5330-01-101-5065)					1 EACH PER TANK
ANN	BOLT (NSN 5306-00-637-8723)					12 EACH PER TANK
ANN	WASHER (NSN 5310-01-369-5648)					12 EACH PER TANK
ANN	PLUG PROTECTIVE (5340-01-128-9554)					16 EACH PER TANK
AS REQ	SEAL NONMETALLIC (NSN 5330-01-320-3692)					1 EACH PER TANK
AS REQ	SCREW CAP (NSN 5305-00-988-7794)					6 EACH PER TANK
BIEN	NBC FILTER (PRIMARY) (4240-01-161-3710)					2 EACH PER TANK
BIEN	NBC FILTER (BACK-UP) (4240-00-828-3952)					2 EACH PER TANK
BIEN	NBC FILTER (SQUARE) (4240-00-866-1825)					1 EACH PER TANK

Figure 14

what they are or where they go. One could argue that many of the steps in the checklists are redundant and are included in the TM -20, but experience shows that some of these tasks don't get accomplished. Why is this the case? Selected tasks listed in the TM -20 can realistically be performed by crewmembers, but frequently the crewmembers won't know. The mechanic, who is using the TM -20, assumes the crewmembers know and they don't; therefore, the task doesn't get performed. If the QA/QC inspectors miss it, we have a problem. Adding detail to the checklist enhances situational awareness and ensures all personnel know the tasks to be accomplished. Making sure all personnel involved in the service have a clear task and purpose will lead to mission accomplishment.

The scheduled service is only one of the many components of an effective unit maintenance program, but it serves as the foundation for success. An effective scheduled service program requires a significant investment of resources, and it must be treated as a training event worthy of protecting. If it is treated as an afterthought, you will not reap the benefits of your labor. Avoid paying high labor costs (in terms of lost training hours and training dollars) by paying a reasonable price through a comprehensive scheduled service program. The Army has given us the most modern weapon systems found in the world, but some of these technical systems are

increasing in age and require the best maintenance possible for them to effectively operate. This fact makes the performance of scheduled services even more imperative if our equipment is going to last and carry us to the final objective.

Note: If you are interested in obtaining the complete service program contact the Battalion Motor Officer or Battalion Maintenance Technician at the following address: Commander, ATTN: BMO, HQ, 2-63 AR, Unit 28014, APO AE 09112 or phone DSN 476-2786.

CW3 Kevin L. Cox enlisted in February 1979 as a 63C/63N and worked on the M60-series tank until 1982 when the fielding of the M1 began. He has served with several armor units and the U.S. Army Armor Center and School. In 1988, he was selected to attend Warrant Officer School. Upon completion of this school, he was assigned to M109 and MLRS battalions until selected for promotion to CW3 and attendance at the advanced course. His professional experience with the M1-series tank spans more than 17 years. Upon completion of the advanced course, he was assigned to 2-63 Armor as the BMT in the Fall of 1997.

SFC Joseph N. Pishner Jr. enlisted in January 1984 as a 45N and worked on the M60-series tank until October 1985 when he was reclassified as a 45E. He

has served with several armor battalions and the 27th MSB as a team chief, ORF maintenance manager, and division recovery OIC. He has over 15 years experience on the M1-series tank. He participated in the fielding of the M1A2 at Fort Hood with 1-8 Cav. He also participated in the fielding of the M88A2 at Fort Hood and the LMTV, which was all part of Force Package 2000. SFC Pishner has attended numerous Army maintenance schools and has always graduated in the top 5% of his class. He currently serves as the team chief for B/2-63 Armor.

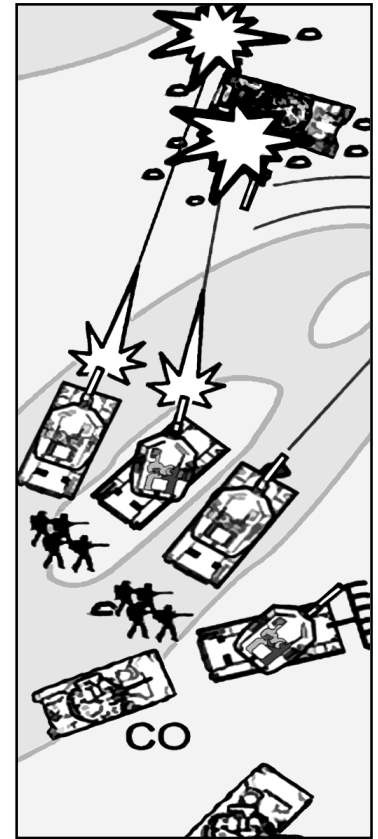
LTC Peter D. Utley was commissioned in 1982 as an armor officer through ROTC after graduating from The Citadel, the Military College of South Carolina. During his career, he has served with numerous cavalry squadrons of the 2nd, 4th, 9th and 11th Regiments in various command and staff positions. In 1990, he deployed to Southwest Asia with the 2nd Squadron, 4th Cavalry, 24th Infantry Division (Mech) as the squadron S3 air and squadron S3. Most recently, he served as the commander of 2-63 Armor from 4 February 1998 to 28 February 2000.

Victory in the Red Zone

by Captain Bill A. Papanastasiou

Alpha Company, a mechanized infantry company team, advanced westward at less than moderate speed. Not more than a few hours short of LD, Alpha Company had assumed the advance guard for the task force. The team commander decided there was little time for a proper intelligence preparation of the battlefield (IPB) or rehearsals. However, he did remember that the battalion staff reported that a reinforced enemy combat security outpost (CSOP) lay less than four kilometers away. Meanwhile, the task force commander barked into the team commander's ear to slow down so he would not separate from the obscured main body. The tremendous dust clouds kicked up by the advancing Alpha Company had blinded the rest of the task force traveling in the diamond formation.

Suddenly, two of 3rd platoon's Bradley Infantry Fighting Vehicles (BIFVs) catastrophically exploded in balls of flame due to enemy direct fire. At the same time, heavy artillery landed all around the advancing team, causing great confusion. Friendly vehicles were firing in every direction and moving every which way. A tank from 1st platoon accidentally fired on and destroyed a 3rd platoon BIFV. On the left flank, 2nd platoon, with four BIFVs and mounted infantry, tried to advance along a tree line, which ran parallel to the team's axis of advance. In a shower of anti-tank guided missiles (ATGMs), originating from inside the tree line, the platoon lost three vehicles and their mounted infantry in seconds. The platoon leader failed to clear the tree line before advancing. Watching in horror, the team commander realized he had lost total control of the situation. He also regretted not conducting his own, thorough IPB prior to LD. As it turned out, the CSOP was actually one kilometer closer than intelligence had reported. Clearly, the entire team fell right into the enemy kill sack. In less than five minutes, Alpha Company lost seven BIFVs and two tanks to direct and flanking ATGM fire and mines. The fact that the enemy destroyed nine of Alpha Company's 14 combat vehicles made it combat ineffective. To make matters worse, the entire CSOP withdrew within the defending motorized rifle battalion's defensive line without any losses.



As alarming as this example may be, one is more shocked to learn that such failures occur repeatedly to company teams deploying to the combat training centers, especially the National Training Center (NTC) at Fort Irwin, California.¹ Company teams are failing to show proficiency in critical collective tasks, such as direct fire planning and execution, killing with lethal direct fires, executing effective actions on contact, using proper movement formations and techniques based on terrain and enemy situation, and exploiting the effects of combined arms. Concerning the latter, the unplanned use or the misuse of dismounted infantry is most common. Thus our company teams seldom achieve the degree of tactical initiative needed to force the enemy to conform to our commander's operational purposes and tempo, while retaining freedom of action.² This inability to impose our will on the enemy results in our reacting to *his* terms of battle, giving him the advantage of dictating when and where to fight. In order

to reverse this trend, our tank and mechanized infantry company teams must aggressively and effectively execute maneuver when in contact with the enemy. They must close with and destroy the enemy with massed lethal fires from all combined arms assets, while at the same time securing and preserving their own combat power and successfully accomplishing the team's mission.

This article attempts to shed some light on certain key aspects of offensive maneuver planning that our company teams should consider. The tactical suggestions presented are not meant to be approved solutions but simply approaches to increasing the company team's chances of success in offensive maneuver execution.

This analysis will focus on three major topics: The first, knowing the enemy, will cover IPB and reconnaissance. The second, transitioning from movement to maneuver, will include discussion of the approach march and

actions on contact. The final area will concern maneuvering in the enemy's battlespace, and this will explain the Red Zone, the application of combined arms, and fire and movement.

Knowing the Enemy

Therefore, I say: Know the enemy and know yourself; in a hundred battles you will never be in peril. When you are ignorant of the enemy but know yourself, your chances of winning or losing are equal. If ignorant of your enemy and of yourself, you are certain in every battle to be in peril.³

To put it in contemporary terms, Sun Tzu, in his writings on war over 2,000 years ago, intended that commanders at all levels conduct what we call an intelligence preparation of the battlefield (IPB). This is the crucial second step in the mission analysis phase in the military decision-making process (MDMP). A negative trend observed at the NTC is that IPB at the company team level is either not done to the necessary level of

detail, or simply not done at all. Company team commanders usually do not template the enemy positions down to individual vehicle and dismounted fighting positions. Often ignored is the potentially lethal hand-held anti-tank threat. Moreover, company team commanders generally do not analyze the terrain for intervisibility lines, dead space, choke points, and trafficability. Perhaps more importantly, they often fail to consider the enemy's use of terrain with respect to specific weapon systems and obstacle emplacements. The result is that units haphazardly move into enemy engagement areas and suffer heavy losses.

The company team commander must conduct a thorough terrain and weather analysis by way of a map reconnaissance and, if possible, from dominating terrain overlooking the axis of advance before the start of the attack. In light of this analysis, the commander must then seek to understand the enemy situational template provided by the task force staff.⁴ Given this information and his own conclusions, the commander should attempt to visualize the enemy's dispositions, especially dismounted, and possible enemy courses of action. From this estimate, the commander will be able to develop a flexible scheme of maneuver that will ensure the company team secures the position of tactical advantage from which effective massed lethal fires and further maneuver against enemy weaknesses can occur.

Quite often though, the company team commander may not have adequate intelligence on the enemy, and thus will have difficulty visualizing how the enemy will fight. Therefore, the commander may need to gather, by way of reconnaissance, his own combat information — what our doctrine calls “those facts obtained on the battlefield.”⁵ However, reconnaissance can result in combat power losses and much time expended. Hence, the commander must balance the need for specific information against potential losses in the combat power that he will need during actions at his decisive point.⁶

A non-doctrinal technique that resembles the Russian use of “combat reconnaissance patrols,” or “forward patrols,” is the use of a combined arms patrol consisting of one tank, two BFVs, and a dismount infantry squad. This patrol will allow the company

team to gain early contact with the enemy using the minimum amount of force, thus, giving the commander time to analyze the situation and maneuver the mass of his force against the enemy with the greatest possible advantage.

Transitioning From Movement To Maneuver

With a clear vision of the terrain and enemy based on his IPB and the combat information provided by his combined arms patrol, the team commander can make sound decisions with respect to the type of movement formation to use during the approach march and which movement technique to use in conjunction with the movement formation. At the NTC, company teams consistently do not plan and rehearse the movement technique they will use with the movement formations, and often make contact while traveling or in column. Commanders have difficulty transitioning from less secure movement formations and techniques to more secure ones, like the wedge and bounding overwatch, respectively. The solution is that commanders must plan and rehearse these transitions, essential in a movement to contact, based on the likelihood of enemy contact.⁷

The transition from movement — when units bound forward supported by an overwatch element — to tactical maneuver, when an active base of fire covers forward progress, should occur before entering into the enemy's direct fire battle space. Quite often, observer/controllers (OCs) observe company teams moving, while in traveling overwatch, into the enemy's fire sack, where it is rapidly destroyed. Furthermore, once joined in battle, company teams fail to execute effective actions on contact. The typical reaction to enemy contact is a complete halt and an attempt to return fire at targets often beyond maximum effective ranges.

Instead, the company team should execute a well-rehearsed battle drill that establishes a base of fire, not an overwatch, by one element while the remaining elements seek covered and concealed positions. Unlike an overwatch, which suppresses when the enemy is visible, a base of fire actively suppresses an objective whether the enemy is visible or not.⁸ The net effect is that the enemy's “heads” are down, seeking cover, rather than engaging

friendly forces as they attempt to maneuver. Furthermore, it gives the commander time to develop and evaluate the situation, and decide on and execute a viable course of action. General George S. Patton addressed the same matter in his March 6, 1944, “Letters of Instruction”:

In battle, casualties vary directly with the time you are exposed to effective fire. Your own fire reduces the effectiveness and volume of the enemy's fire, while rapidity of attack shortens the time of exposure.⁹

Maneuvering in the Enemy's Direct Fire Battle Space

The last line in the above quote brings us to the next matter, effectively maneuvering in the “Red Zone” to bring about the enemy's destruction. The “Red Zone” is a non-doctrinal term referring to the enemy's direct fire battle space.

It is a dynamic, physical area that expands or contracts in relation to the ability of the enemy to acquire and engage with direct weapons fire. It is graphically characterized, in a BLUE-FOR deliberate attack, as the area between the probable line of contact and the limit of advance, within enemy direct fire range.¹⁰

As observed at the NTC, many company teams lose cohesion short of the objective and are unable to mass against a defending enemy or a counterattacking combined arms reserve. Maneuver has two components — fire and movement. Fire neutralizes, suppresses, demoralizes, and destroys enemy forces. Movement brings this fire-power into positions of advantage from which it extends and completes the destruction.¹¹ The solution to the above problem is the synchronization of fire and movement, which will enable company teams to effectively close with and destroy the enemy.

Fire from the rear is more deadly and three times more effective than fire from the front, but to get fire behind the enemy, you must hold him by frontal fire and move rapidly around his flank. Frontal attacks against prepared positions should be avoided if possible. “Catch the enemy by the nose with fire and kick him in the pants with fire emplaced through movement.”¹²

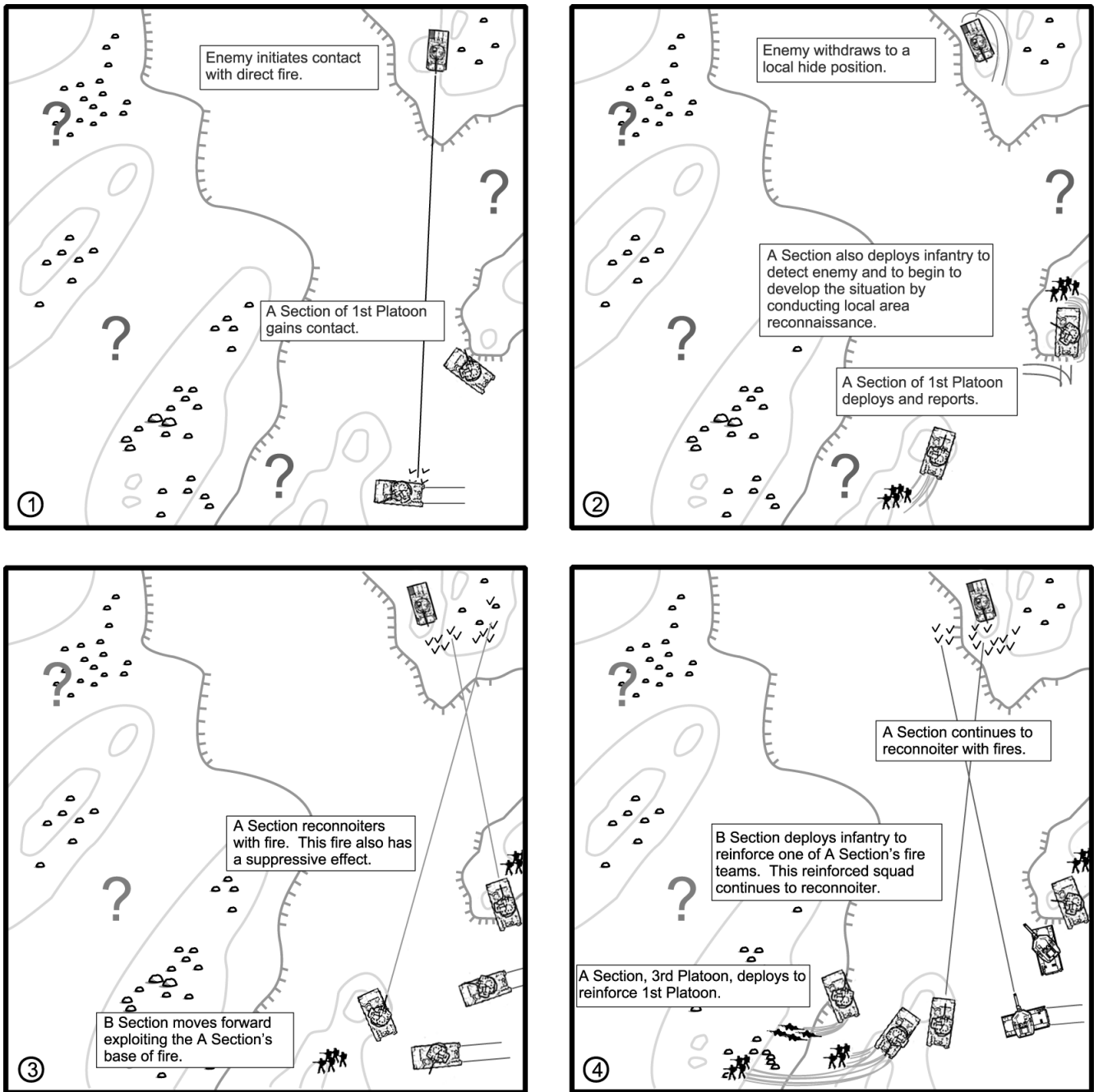


Figure 1: Company Team Maneuver through the Enemy's Battle Space!¹⁶

In order to avoid unnecessary losses, a commander must develop the situation and allow conditions for success to build before executing maneuver. He must possess combat patience, which allows him to control the pace of actions — tempo. It may take some time for the company team to regain the advantage after initial contact. This can be achieved by establishing suppressive fires and exploiting an enemy flank through the use of masking terrain. Moreover, it is critical to maintain all-around security throughout the fight in the Red Zone, especially to counter enemy anti-tank and dismounted threats.

To accomplish this maneuver of closing with and destroying the enemy, a tank and mechanized infantry company team commander has at his disposal a combined mix of assets. In a combined arms team, each type of system — tank, BIFV, and mechanized infantry — has an important role. The combined strengths of all these systems negate the weaknesses of individual systems.

The term combined arms refers to two or more arms in mutual support to produce complementary and reinforcing effects that neither can obtain separately.... Tactically, combined arms

*refers to coordinating units of different arms or capabilities.... Complementary combined arms should pose a dilemma for the enemy. As he evades the effects of one weapon or arm, he places himself in jeopardy of attack by another weapon.*¹³

A negative trend observed at the NTC is that company teams are not planning for the use of dismounted infantry in the attack. The result is that either the infantry become Red Zone casualties as their vehicles are destroyed, or they become possible fratricide casualties if they are dismounted, due to the unco-

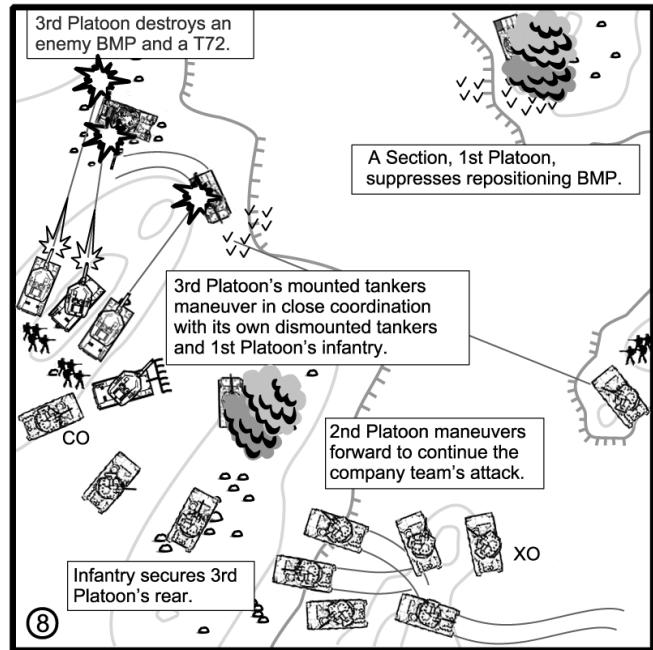
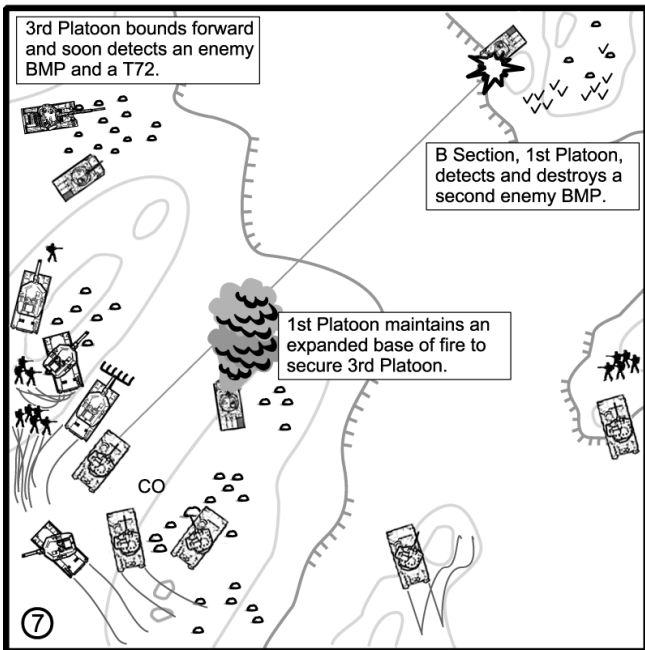
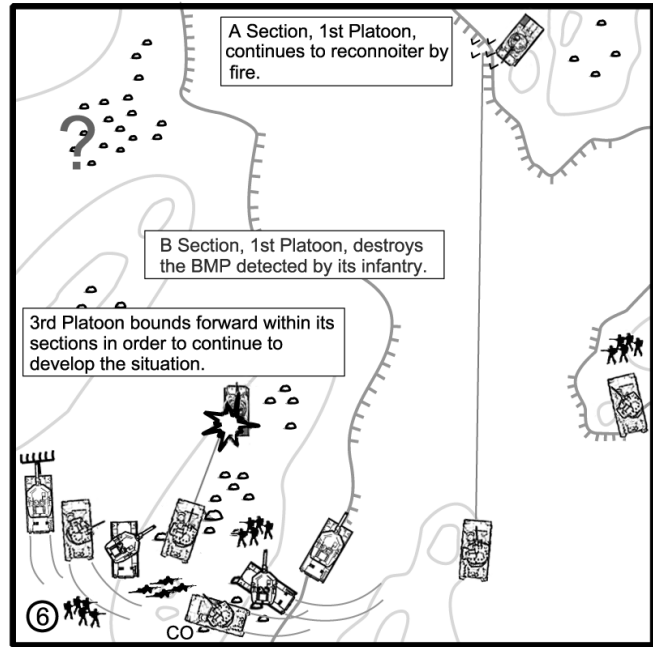
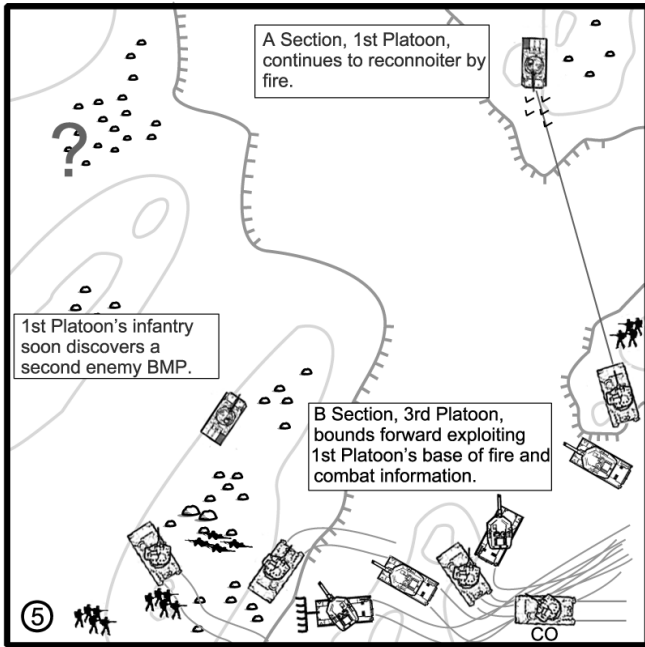


Figure 1a: Company Team Maneuver through the Enemy's Battle Space

ordinated nature of their employment. Based on a detailed terrain and enemy analysis, the company team commander must realize the value his dismounts have in ensuring mission accomplishment. The commander must fully integrate his dismounts in the scheme of maneuver.

There are many techniques for employing dismounted mechanized infantry. For instance, they are perfectly suited to operate in restrictive terrain, such as forests, rocky ground, and urban areas. They can clear passes and defiles for vehicles moving through

these dangerous areas. Infantry can also attack an assailable flank, forcing the enemy to commit in another direction. They are greatly beneficial in a reconnaissance role, getting eyes on the objective and guiding fighting vehicles to advantageous ground where they can bring effective fire to bear. An infantry squad can direct many sets of eyes in a 360-degree surveillance with a far better view of the situation than mounted soldiers who may be "buttoned up."

During the Yom Kippur War of October 1973, the Israelis learned the painful lesson of not having enough mechanized

infantry in their unit organizations. Many Israeli armored brigades suffered heavy losses due to Egyptian tank killer ambushes. They lacked infantry to provide close-in security against hard-to-detect enemy dismounts.¹⁴

*The tank is closed and to a large extent it is "blind." Its gun and coaxial machine guns can fire only in the direction that the turret is facing. On the other hand, the soldiers on the armored personnel carrier can make use of several pairs of eyes to scan the area in all directions, and they can quickly fire many weapons in a flexible manner.*¹⁵

The following is a possible offensive technique in the use of combined arms. The company team commander can direct a base of fire force consisting of — two BIFVs and two tanks. The BIFVs suppress enemy dismounts and vehicle positions while the tanks engage the enemy vehicles as they move into their firing positions. As the base of fire force suppresses the enemy causing him to seek cover, the dismounted infantry, acting as guides and scouts, move ahead of the flanking force that is seeking the enemy's rear. This technique sets the conditions for success by attacking the enemy from multiple directions. It also ensures that undetected enemy vehicles and infantry do not surprise the flanking force. For a graphical example of the effective execution of combined arms maneuver at the company team level see Figures 1 and 1a.

In short, successful closure with and destruction of the enemy hinges on the skillful use of the effects of combined arms and attacks from multiple directions.¹⁷

In some detail, we explored a few major reasons for the failure of the com-

pany team to effectively close with and destroy the enemy in the offense. Successfully maneuvering a combined arms team against a determined enemy is certainly part art and part science. With instinct and intuition, a commander must execute quick and sound tactical decisions based on his own capabilities and the little information he may have on the enemy and terrain. Such intuitive and instinctual capacity is developed by repeatedly placing the commander under difficult and realistic conditions — whether actual field exercises or computer simulations — and in as many different and stressful situations as possible to train his tactical decision-making faculties. Furthermore, the commander must expose his subordinates to the same intensive training to develop their ability to act quickly and decisively in any situation.

Home station is where this development must occur. Company team commanders must know our doctrine and understand that it is merely a foundation on which to build flexible tactical execution. By also possessing the ability to visualize the battlefield and act

accordingly, commanders can aggressively and effectively maneuver their units and close with and destroy the enemy with massed lethal fires, while at the same time securing and preserving their own combat power.

CPT Bill Papanastasiou is a 1994 graduate of the U.S. Military Academy, where he received his Armor commission and a B.S. in International and Strategic History. He has served at Ft. Riley, Kan., with 1-34 Armor, 1st Bde, 1st ID (M) as a tank platoon leader, tank company XO, and HHC XO. Upon arriving at his current duty station, Ft. Stewart, Ga., he was assigned as the garrison S3. His military schooling includes Armor Officer Basic Course, Air Defense Artillery Officer Advanced Course, Air Assault School, and Airborne School. Currently, he commands A/3-69 Armor, 1st Bde, 3d ID (M) at Ft. Stewart.

Notes

¹Center for Army Lessons Learned, *A Collection of Trends, with Techniques and Procedures that Work*, NTC Trends Compendium No. 97-17 (Fort Leavenworth, Kan.: U.S. Army Training and Doctrine Command [TRADOC], September 1997) N24-40.

²*FM 100-5, Operations* (Washington, D.C.: Headquarters, Department of the Army, 14 June 1993) 2-6.

³Sun Tzu, *The Art of War*, trans. Samuel B. Griffith (London: Oxford University Press, 1963) 84.

⁴Center for Army Lessons Learned, *Closing with the Enemy: Company Team Maneuver*, Special Study (Fort Leavenworth, Kan.: U.S. Army Training and Doctrine Command [TRADOC], March 1998) 11.

⁵*FM 101-5-1, Operational Terms and Graphics* (Washington, D.C.: Headquarters, Department of the Army, 30 September 1997) 1-130; *FM 17-95, Cavalry Operations* (Washington, D.C.: Headquarters, Department of the Army, 19 September 1991) 3-1.

⁶Special Study, 16.

⁷*Ibid.*, N30.

⁸*FM 71-1, Tank and Mechanized Infantry Company Team* (Washington, D.C.: Headquarters, Department of the Army, 22 Nov 1988) 2-34.

⁹George S. Patton, Jr., *War As I Knew It* (Boston: Houghton Mifflin Company, 1947) 379.

¹⁰CTC Quarterly Bulletin No. 96-10, 17.

¹¹*FM 71-1*, 3-23.

¹²Patton, 380.

¹³*FM 100-40, Tactics*, Initial Draft (Washington, D.C.: Headquarters, Department of the Army, March 1995).

¹⁴RB 100-2, Vol. 1, "Selected Readings in Tactics, The 1973 Middle East War," (Fort Leavenworth, Kan.: U.S. Army Command and General Staff College, 1980) 40.

¹⁵Avraham Adan, *On the Banks of the Suez* (Jerusalem, Israel: Edanim Publishers, 1979) 211.

¹⁶Special Study, 63-64.

¹⁷*Ibid.*, 79.

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Platoon Leadership in the Offense

Recognizing the Line Between Actions on Contact and Maneuver

by Captain Celestino Perez

In preparing platoons for mounted field training, trainers usually place importance on a platoon's ability to approach battlefield problems in terms of the seven forms of contact. Platoon leaders have learned that for each form of contact there exists a platoon battle drill. But there is danger in assuming that battle drills can always provide a sufficient response to enemy contact, particularly direct-fire contact.

My argument is that the defining responsibility of the tank platoon is not the battle drill, but instead closing with and destroying the enemy through maneuver. Furthermore, the relations between battle drills, actions on contact, and maneuver can benefit from some study. One way to reach clarity about these matters is to train companies and platoons to establish a phase line (or a probable line of deployment) that, when crossed, will cause leaders to think no longer in terms of movement formations and battle drills (namely action and contact drills), but maneuver.

Some discussion of maneuver is necessary. The recent material on maneuver is illuminating. My first exposure to the topic was a videotaped presentation entitled "Red Zone Brief," given by then-COL James Grazioplene, former chief of the Operations Group at the National Training Center. This tape was followed by an article from the Center for Army Lessons Learned (CALL), entitled "Black 6, this is Red 6...Contact..." The article, written in two parts, can be found in *CTC QB No. 96-10*. This article was followed by a CALL Special Study entitled "Closing with the Enemy — Company Team Maneuver" (March 1998). Any armor or mechanized-infantry leader who has not become familiar with these materials owes it to his unit to do so.

In fact, Army doctrine has been a Johnny Come Lately to the importance of maneuver, at least in its publications. COL Grazioplene explained during his briefing that even the Army's doctrinal material was sorely deficient on the subject. I have found that since his lecture, the revised company-level doctrine (*FM 71-1*, 1998, and *ARTEP 71-*



Photo by Greg Stewart

1-MTP, Final Draft 1998) grants a central role to maneuver in the offense, as does the latest edition of *FM 17-15* (April 1996).

A summary of CALL's approach to maneuver is in order. To know maneuver is to understand that, in order to close with and destroy the enemy, forces must enter the enemy's battlespace not in formations, but using the bounding overwatch technique. Upon receiving fire, the overwatch element shifts into the suppression mode. The transition from bounding overwatch to suppression marks the transition from movement to maneuver.

In the offense, this applies not only to the destruction of the enemy's main effort, but it applies (arguably more so) to the destruction of such elements as single anti-tank positions arrayed in depth. The aim is not to run into the enemy's force, even a single anti-tank position, without proper overwatch and suppression, so that entire companies and task forces are not destroyed by what should be a negligible force.

Contact and Action Drills Prior to the PLD

It is my contention that those instances when the use of contact and action drills are necessary are fewer than commonly thought. Prior to crossing a probable line of deployment, no direct-fire contact is expected. That is because the combined efforts of the task force S2, commanders, and pla-

toon leaders have capably conducted their intelligence preparation and determined that no direct-fire contact should be expected until the unit reaches the PLD. Since our business does not entail ideal conditions, contact and action drills, along with tactical formations, do serve their purpose. A formation is meant to enable the fastest movement possible toward the PLD, all the while recognizing the minimal threat of direct-fire contact. Indeed, if a platoon encounters direct-fire contact, e.g., a single AT system in the hills, then all soldiers in the unit — from the loader on D22 to the task force commander — should be properly surprised. After all, the unit is receiving direct-fire contact earlier than expected. A properly chosen formation enables a unit to respond satisfactorily to such surprises with an established weapons orientation. And, depending on the situation, a battle drill might be in order, which would fulfill the first step of actions on contact, i.e., return fire.

The battle drill deserves closer attention. Battle drills enable a platoon to react "when contact is made with small arms fire or when the platoon sights the enemy without being engaged and does not want to stop or slow its movement" (*FM 17-15*, p. 3-33). I contend this enemy situation — and hence the need for the contact drill — will seldom arise prior to the PLD. No rational, lone machine-gunner would engage even one tank with small-arms fire. Furthermore, the enemy holding the machine

gun, after observing an approaching formation of tanks, would most likely remain hidden and call for indirect fire. Since the contact drill allows the platoon to “engage the enemy without changing its direction or speed of movement along an axis of advance,” the platoon would best be advised to either destroy the machine-gunner by using maneuver or maintain contact until handing off the target to another unit. In either case, the platoon leader who continues to move without altering direction or speed should be fired.

The action drill, as distinguished from the contact drill, is more useful, but it is seldom employed effectively. Upon enemy contact, the action drill is meant to “orient the...platoon’s frontal armor toward the antitank fire while moving to cover and concealment. If the platoon cannot reach a covered and concealed position or achieve weapon standoff, the platoon leader directs the platoon to assault the enemy” (*FM 17-15*, p. 3-36). For this condition to arise, the IPB of the S2, the commander, and the platoon leader must have failed, since it did not correctly depict the enemy’s main or forward-deployed battlespace. Sadly, this scenario occurs fairly regularly at the National Training Center. To make matters worse, the action drill, which should have worked, fails for two reasons. Either the platoon leader failed, in his map reconnaissance or while on the move, to orient sectors of observation towards danger areas where an antitank system might lurk, or a crewman failed to observe his sector. The antitank gunner will be able to fire off two or three rounds without being detected, inevitably finding grille doors. And the antitank gunner’s work is just beginning, because the possibility of his destroying an entire company team or task force is likely.

For this reason, it is critical that the PLD be accurate and a soldier’s concern for 360-degree security become instinctive. I stated earlier that the action drill is seldom employed because, in order for the drill to occur, someone must locate the antitank system in order to orient his platoon’s frontal armor in its direction. But few platoons seem able to determine the general direction from which the fires come. Also, assuming the enemy system is found, one also has to assume it is not alone. Just as we try to establish a tactical “L” to force the enemy to fight in two directions, so does the enemy. If a platoon or — what is more likely — an entire company conducts an action drill, all

eyes (that is, those of every TC, gunner, loader, and driver in the company) will be on the supposed location of the antitank system. With all eyes on the menacing system, a second antitank system will undoubtedly exploit the company’s failure to maintain 360-degree security and will commence the slaughter. The upshot is that if the action drill is necessary prior to the PLD, we are in bad shape. So, our objective must be to minimize the instances when action drills prior to the PLD are necessary and focus on those things (IPB, security, sector discipline) that will negate the chance of a pre-PLD slaughter.

Contact and Action Drills After the PLD

The use of a contact drill after the PLD is unlikely for the same reasons as prior to crossing the PLD. That is, few rational machine-gunners would take on a tank, and no rational platoon leader would bypass even an unarmed enemy without orders, for even this enemy has the ability to report or call for indirect fire. In most instances, the use of the action drill after the PLD is both unnecessary and inadvisable because the platoon will be conducting either bounding overwatch or maneuver, both of which require the element to provide 360-degree security for a moving element with the ability to fire upon every single area from which an antitank system might fire. The proper response to enemy contact, which is now expected since the platoon has crossed the PLD, is to issue a fire command and recommend a course of action, all the while maintaining 360-degree security to avoid a successful L-shaped ambush or main defense. The platoon leader who proceeds after crossing the PLD must expect contact at every minute and perhaps be a little disappointed when it has not yet appeared.

One instance, however, that might require an action drill is if a platoon is engaged from an area that is covered only by visual scanning. In this instance, it might be advisable to conduct an action drill to orient the platoon’s frontal slopes toward the enemy. However, a better trained platoon might instead suppress the offending enemy with one or two tanks. This course of action would decrease the possibility of an L-shaped ambush by not requiring all four tanks to re-orient frontal armor in unison, thus leaving the maneuver element holding the bag without overwatch or suppression.

Maneuver

Once units cross the PLD, formations cease and set-move drills begin in the form of bounding overwatch. To begin with, if task force commanders heed the Red Zone Brief, they will never order company teams to execute bounding overwatch with another company (i.e., Alpha Team set, Bravo Company bound) because from such a scheme it is geometrically impossible for one company to provide effective overwatch for another. Since our company commander is not doing a set-move drill with another company, he has options. He can array his platoons so all are conducting set-move drills within the platoon (Alpha section set, Bravo bound), or he may elect to have two platoons conducting set-move drills with each other (Red set, Blue bound) while one platoon is kept back to respond to contact as an enveloping force. Furthermore, the commander can give or withhold from his platoon leaders whether to bound by sections. Regardless of the levels at which bounding overwatch is occurring, all overwatch elements must realize that they are their partner’s keeper. That is, a section or platoon that is providing overwatch must not allow the bounding element to take direct fire and suffer loss. The Grazioplene approach was to assign a grade to the overwatching element’s performance. An “A” goes to the overwatch element whose partner proceeds unscathed. An “F” goes to the overwatch element whose partner loses two vehicles.

The platoon leader and commander at this point should no longer be thinking in terms of contact and action drills to react to surprise conditions (which is the case prior to the PLD), but of overwatch. His section or platoon will be either the beneficiary of an overwatch or will be the element overwatching. During the overwatch, the platoon leader must think about the next phase of the offensive engagement, which is the transitional event that will trigger actions on contact and, as soon as a course of action is set, maneuver. This transitional event is the first (and expected) direct-fire enemy contact.

Stated differently, once an overwatch element fires a round in order to maintain its “A” average in relation to the bounding element, actions on contact have begun. We are now in an adventure that will at some point lead to the execution of a course of action. Once actions on contact lead to a course of

action, all lessons on maneuver will have ensured that the foremost thought in leaders' heads should be the race to establish the "L," i.e., a course of action that will cause the enemy to fight in two directions. This concept is nothing new. A familiar quotation from Patton's *War As I Knew It* states:

Whenever possible, beginning with the squad, use a base of fire and maneuvering element. The maneuvering element should be the larger of the two forces, and should start its attack well back from the point of contact of the base of fire. The attacking force must proceed sufficiently far beyond the hostile flank to attack from the rear. As soon as the enveloping attack, or better the rear attack, has progressed sufficiently to cause the enemy to react, the base of fire transforms itself into a direct attack along the original axis of advance.

In summary, prior to the PLD, formations are the proper approach, along with the necessity of thinking in terms of contact and action drills (although those are unlikely if good IPB and 360-degree security occur). After crossing the PLD, the unit shifts from formations to bounding overwatch, during which time platoon leaders must eagerly anticipate that first contact which will initiate actions on contact. The ideal result of actions on contact should be a course of action that uses maneuver, i.e., set-move drills, to establish an "L".

What Might a Platoon Leader Be Asked To Do?

Sometime during the race to develop an L, the platoon leader and commander will have to close with and destroy the enemy. Ask a platoon leader to imagine his role in the destruction of the enemy. Chances are he probably envisions an assault, whereby his or his buddy's platoon, with tanks on line, charges across the objective with guns blazing in an attempt to run over the enemy. I believe the literature on maneuver should do much to dispel this notion. Indeed, not only should most offensive engagements *not* end with a platoon-level assault, very few should. The reason is that maneuver enables us to find, fix, and destroy the enemy by attacking him from two directions without having to run him over.

I should like to emphasize the options available to the platoon during an offensive engagement while conducting

maneuver. Depending on the mission, a platoon may be asked:

- To destroy the enemy by maneuver (as described above) through set-move drills by section or crew
- Conduct a support by fire (SBF) with all four tanks for another maneuver element
- Assault (on line) as part of the company assault or by itself (with or without overwatch/SBF)
- Conduct an assault in column (non-doctrinal, but useful) to penetrate the enemy's defense or bypass enemy contact
- Conduct an attack by fire.

A good discussion awaits those leaders who sit down to determine those conditions that merit one of the five options more than the others. Nevertheless, it is the company team commander's responsibility to assign his platoons their tasks (hence the emphasis on the use of doctrinally correct terms), while recognizing the need to maintain flexibility and perspective in the planning and execution phase of the engagement. Just as COL Grazioplene described that the ideal graphic for a company team in the offense is the simple axis of advance (i.e., not a series of SBF graphics), so should the company team commander structure his plan to accommodate simple fragmentary orders and flexibility.

His plan must be simple. There is a notion that the loss of communication equates to a loss of control, and a loss of control equates to the loss of command. I do not know whether I agree. I shall posit, albeit not insistently, that a commander must make his plan with the assumption that communication will diminish as a mission continues. In fact, there are some who write, and experience confirms, that in many instances once an engagement is joined, a commander will be able to affect the battle not by constant decisions based on near-perfect or good information, but at only a few points with partial information. For instance, with training, he may be able to order effectively the shifting of his main effort (perhaps by moving his tank to the front of a platoon, which has become the new main effort) or a change to the company team's mission (shouted repeatedly, to be sure, in bits and pieces into his helmet until all acknowledge). The commander's job is most important during the designation and shifting of the main effort and the writing and de-

livery of his operations order, during which he can expect to get as much communication and control as he is ever going to get.

One method that facilitates simple plans is the company SOP, which determines the spatial relations between the platoons, and company "plays" that establish those platoons that will set, those platoons that will envelop, and the spatial relations between these actions.

Support By Fire

The task of support by fire deserves some attention. The Red Zone Brief did everyone a service by teaching that the SBF force, prior to the friendly maneuvering element's getting into the picture, must have some enemy force as a partner. In other words, an element cannot be in a support by fire until enemy vehicles are in a gunner's reticle. Otherwise, the platoon or company given the support-by-fire mission, despite the mission statement, remains in a *de facto* movement to contact.

A couple of implications arise. First, a company team commander or platoon leader given the task of establishing a support by fire must ask the following: Sir, suppose I get to the general location of the SBF intent graphic and I find it an adequate place from which to support, but there is no enemy — do I have permission to continue until I encounter enemy, even if I must move two, or five, or ten kilometers farther? The answer will certainly depend upon, among other things, whether the objective relates to an enemy- or terrain-based mission. For example, it may be determined that the objective in question is a good place from which to provide the task force with security during refueling operations, a necessity that may or may not have been determined prior to crossing the line of departure. Since the element given the SBF task determines that the maneuvering force is not necessary to secure the objective, the SBF task transitions to an overwatch task while the original maneuver force occupies the objective to protect the refueling operation.

Another option is that the original SBF element occupy the objective and provide the requisite security while the original maneuver force does something else. The point is not to issue or accept the SBF task without putting to rest any lingering doubts in the precise meaning of the leader's intent.

The second implication that arises is whether the SBF element is allowed to establish an "L" during the execution of the SBF task. The company team commander may ask: Sir, if my platoon gets to the general location of the SBF intent graphic and I find it an adequate place from which to support, and I encounter enemy — do I have permission to maneuver (remember, set-move drills to establish an "L") in the general location of my SBF position until the maneuvering force arrives? Furthermore, may I recommend that I destroy the enemy with company-level maneuver if I discover the enemy is not as robust as we think it is now? The point here is to envision units executing support by fire while not in a straight line. Leaders in SBF must be able to take the initiative and recommend limited maneuver to better support the maneuver force or, perhaps, to proceed with closing with and destroying the enemy on his own, thereby relieving the original maneuver force of its mission.

Conclusion

The preceding comments are meant to raise interest in the employment of company teams in the offense. Although I have written nothing that is above argument, I do insist that discussions on such topics as battle drills, actions on contact, and maneuver will be fruitful and will help clarify questions and stir imagination, particularly in the methods by which we train platoons and companies. I also contend that those training techniques that bring to the forefront the criticality of intelligence preparation and maneuver will pay enormous dividends. To be sure, dismantled training enables leaders to complete their brain-work and soldiers to hone proper habits prior to the first mounting of a tank.

CPT Celestino Perez Jr. graduated from the U.S. Military Academy in 1992 with a B.S. degree in Political Science. His previous assignments include: tank platoon leader, mortar platoon leader, and company executive officer, 3-66 Armor, Ft. Hood, Texas; G3 asst. operations officer; 1st Brigade, 1st ID asst. operations officer; and company commander, D/2-34 Armor, Ft. Riley, Kansas. He is an AOAC graduate. Currently, he commands HHC/2-34 Armor at Ft. Riley.

In this regard, the establishment of the Armor Badge would likely result in a proliferation of badge proposals from the other branches. If an Armor badge were approved, what about the engineers who are breaching obstacles in conjunction with the scouts — in front of the Armor force and exposed to direct and indirect fire? This initiative could result in a landslide of badge requests, everyone of which would state, "Look what I have above my BDU pocket and what you don't have." Is that really what we want in building cohesive warfighting teams? I hope not.

I believe the environment that led to the establishment of the Combat Infantry Badge in 1943, during World War II, was very different than today. The Army required a larger influx of infantrymen to offset a critical shortage and wanted to provide recognition for the branch that was suffering the largest number of casualties under the worst conditions. I respect the CIB and those who have earned it. The appropriateness of the CIB is not in my lane. However, today we train and fight in combined arms formations with mutually supportive missions. The reach of enemy weapons systems leaves no one protected and puts most of the brigade combat team's members into a direct fire engagement area.

I honor the warrior NCO who displayed the courage to look the Chief of

Staff of the Army in the eye and ask him a very poignant and relevant question, and I fully understand his reasons for feeling that a badge is warranted. As Chief of Armor, I think it's my responsibility to answer the force on this issue straight up. This subject is controversial and will continue to be so. All arguments and points in this debate are meritorious and deserve consideration. I would appreciate hearing from anyone and will certainly take all views aboard for further assessment. For the time being, however, I do not support the establishment of a Combat Armor Badge.

The staff here at the Armor Center continues to look at the potential for a competency-based evaluation akin to the Expert Infantry Badge. This effort has merit, as it could provide a formal capstone exercise focused on individual skills qualification that has been missing with the loss of the SQT. Given the intensity of our current mission sets, I don't think this is the right time to put an Expert Armor Badge on the table. Nonetheless, the notion of an EAB is something worth serious consideration.

As always, I look forward to hearing from the force on this or any other issue relevant to the branch.

FORGE THE THUNDERBOLT
AND STRIKE FIRST!

Army Officers Operate Web Site For Company Commanders

Eight Army officers have founded a web site dedicated to improving company-level leadership in the Army. Their web site — CompanyCommand.com — serves as a clearinghouse of good ideas for company, troop, and battery commanders.

The web site is a user-driven forum in which former and current company commanders share their best ideas, products, and lessons learned to benefit current and future company commanders. The goal of the web site is to improve institutional knowledge at the company level of Army leadership by improving the lateral flow of information.

Founded in February, the web site has been received enthusiastically by officers in the field. The number of "hits" on CompanyCommand.com has increased steadily, from 11,114 hits in February to 44,831 hits in April and 78,451 hits in June.

The eight officers, all of whom are assigned to the staff and faculty at the U.S. Military Academy, run the web site during their off-duty hours without remuneration. "Our sole focus is on helping leaders to grow great units and soldiers," said Majors Nate Allen and Tony Burgess, infantry officers who are the site's co-founders.

LETTERS

from Page 4

by the top to level with us that is the primary cause for young officers and NCOs leaving the service in record numbers. If you cannot trust the top, there is nothing left.

Good for you to publish this review. Now, what may come next? I expect the Navy is looking for good looking blondes to staff their submarines, the Air Force for more Kelly Flynn's. The Marines seem to be the only service that is trying to deal with this issue with some honesty... Women as tank commanders? As long as the Navy is intent on putting women on their boats, how can Armor long resist women in tanks? Are they not, boats and tanks, both enclosed structures?...

GEORGE G. EDDY
COL, USA-Ret.
Austin, Texas

HistoryChannel.com Launches Veterans.com

Using the power of the Internet to bring together veterans, their friends and families, HistoryChannel.com has launched Veterans.com (<http://www.veterans.com>), an online portal for the veteran community dedicated to preserving the experiences of men and women who served in the military.

To celebrate the launch, HistoryChannel.com is donating computers and cable modem Internet access to Vet Centers around the country. The donations, which began on Memorial Day, will continue throughout the summer and are in partnership with local cable affiliates.

A hallmark feature of Veterans.com is the "veterans locator" database that allows visitors to search for veterans by name, nickname, hometown, or service background.

The not-for-profit site also boasts eyewitness service accounts and a profile of a "veteran of the month" nominated by site visitors.

Additionally, Veterans.com features war-related discussion forums, information on veterans-related topics, and links to a vast range of military services and veterans organizations.

"The veteran community is one of our nation's most crucial educational resources, and we wanted to ensure that veterans' individual memories and experiences were preserved in a forum accessible by everyone," said Todd Tarpley, Vice President of AETN Interactive.

"The active, dedicated veteran discussion group on HistoryChannel.com showed us that veterans and their friends and families needed a place online exclusively for them, where they can share resources and discuss issues. Veterans.com aims to live up to this demand," he added.

To mark the launch, Senator John McCain participated in a live online chat on May 25, 2000 on Veterans.com. McCain discussed his experiences as a Vietnam prisoner of war, and offered his thoughts on veterans' current concerns.

Bradley Exhibit Opens This Fall At the National Infantry Museum

by Diane L. Urbina

The National Infantry Museum (NIM) at Ft. Benning, Ga., is developing a new Bradley Fighting Vehicle (BFV) exhibit (outdoor and indoor) scheduled to open in November. The museum is in Building 396, Baltzell Avenue, on Ft. Benning's main post. It is one of the largest military museums in the country, housing a collection of more than 25,000 items in 30,000 square feet of exhibit space.

Visitors to the museum will have a first-hand opportunity to see a Bradley Infantry Fighting Vehicle (IFV) up-close, in an outdoor exhibit, featuring the M2A1 and an engineering prototype of the M2A3. The Bradley was developed to accommodate "block" improvements, with the M2A1 incorporating the first of these, an improved TOW antitank missile system and a better chemical protection system. The M2A3 features numerous improvements in lethality and survivability.

The indoor BFV exhibit, "Lethal Beyond All Expectations," will be the single largest exhibit in the museum. This exhibit marks the first time a major weapon system and the story of its development will be featured in a U.S. military museum. In addition to equipment and displays, the exhibit will provide a comprehensive overview of how the system was developed from 1968 to the present,

with supporting documentation. It will explain to visitors the Bradley mission, doctrine, training, and organization. More importantly, the display will include accounts by former and current program participants, including combat developers, materiel developers, and industry representatives, of how the Bradley was developed, tested, fielded, and upgraded over the last 20 years.

The Bradley, as one of the "Big Five" post-Vietnam weapon systems, has had some interesting and unique twists and turns in its development. Following the Vietnam War, the U.S. Army was undergoing radical reorganization and significant changes in doctrine, training and tactics. During these critical changes, and despite a massive Soviet build-up of its armored force, the Army struggled to justify the greatly increased cost of replacing its infantry armored personnel carrier with a much more expensive true infantry fighting vehicle. It was against this setting that the Bradley was designed, developed, and produced. Visitors will gain rare insight regarding the Bradley project's cost, schedule, and performance trade-offs.

The exhibit will feature newspaper articles, photographs, videos and displays grouped by events in the program life-cycle. Some of the equipment displayed will include the

M242 25mm Bushmaster cannon, M257 smoke grenade launcher, M240C coaxial 7.62mm machine gun, M321 5.56mm firing port weapon, training ammunition, infantry squad equipment, TOW missile, M47 Dragon, and SINCGARS radio system.

The Museum continues to seek Bradley documentation (photos, videotape, significant program documents, newspaper articles) for donation to the exhibit. We are particularly interested in information regarding development of the MICV by Pacific Car and Foundry; the three Task Force Reports (Casey, Crizer, and Larkin); the cannon "shoot-off" between Hughes Helicopter Company and Ford Aeronautronic Corporation; live fire testing and test reports; and first-hand accounts of the Bradley's performance during Desert Storm. If you have documentation for donation (which will not be returned), or stories you would like to share regarding development of the Bradley, please forward to:

U.S. Army Tank-automotive and
Armaments Command
Bldg 229
SFAE-GCSS-W-BV (Attn: Diane Urbina)
Warren, MI 48397-5000

Email: urbina@tacom.army.mil

Digital Courseware Offers New Opportunities For Training and Self-Development

by Captain Dan Dwyer

Major John Doe served with distinction as a foreign area officer in a remote country for two years and was recently assigned as the XO of an armor battalion. Having been away from troops for a while, he recognized a need to develop or fine-tune his doctrinal skills. He also aspires to implement an effective Battle Staff training program in his organization that uses innovative techniques and leverages today's technology. How can MAJ Doe get up to speed fast?

By accessing the Internet, MAJ Doe can explore cutting-edge, distance-learning courseware, offered by the Armor School, which uses a full range of multimedia technology, including streaming audio and video, that dramatically illustrates the key concepts of the military decision-making process (MDMP), Army operations, and other staff actions.

Captain Jones, a recent Armor Captains Career Course (AC³) graduate, serving as an S3 Air or company commander, has been tasked by his battalion commander to give an officer professional development (OPD) session on direct fire planning to the other officers in his battalion. How can CPT Jones deliver this OPD using materials found in the FM 71-series doctrinal publications and other references that have broached this topic in the past?

Available to CPT Jones is web-based, visually animated courseware that demonstrates tactics, techniques and procedures of such fundamentals with greater fidelity and effectiveness than a whiteboard could. By using Fort Knox-based instruction, CPT Jones can prepare his brief in less time than it would take to create a PowerPoint presentation. The

work has been done for him and is available anytime, anywhere.

Your unit is preparing for a Combat Training Center (CTC) rotation or real world deployment and is being challenged with finding enough time to train its staff well. How can a brigade/battalion XO or S3 use existing technology to train highly proficient battle staffs and battle captains?

By using Internet-delivered, performance-oriented training that focuses specifically on training battle captains — a topic that has been given cursory mention, at best, in our doctrinal publications. The Armor School has Internet-based instruction that addresses a scope of different learning styles (visual, kinesthetic, and auditory) and a wide variety of subject matter (for example, intelligence preparation of the battlefield (IPB), combat support (CS), and combat service support (CSS) integration).

An Allied international military student finds out that he has been hand-picked to attend AC³ during the next year at Fort Knox, and he wants to show up at the course well prepared. How can he prepare himself for the unknown?

In the foreseeable future, international officers from countries who routinely send their best officers to Fort Knox for world-class training may have access to our distance-learning courseware to gain a familiarization with our doctrine and staff processes prior to arriving at Fort Knox.

The U.S. Army Armor School has made groundbreaking advancements in information technology by pairing proven educational techniques with a revolu-

tionary approach towards delivering its courseware. Its distance learning (DL) program utilizes customized, web-enabled software platforms that are available to be incorporated into a unit's training program or your own professional development. The principal DL course being delivered from Fort Knox is the Armor Captains Career Course-Distance Learning (AC³-DL). This course delivers complex cognitive instruction to geographically dispersed students in a way that has never before been possible.

The Armor School is committed to sharing its distance learning courses with other TRADOC schools, Active Component units, individual soldiers, and allied International Military Officers. Our vision is that in the near future, active duty soldiers and units with .mil addresses will have access to this courseware much like accessing the Reimer Army Digital Training Library (ADTL) and other military educational sites.

For more information on AC³-DL or the Armor School's Distance Learning Program, contact:

CPT Dan Dwyer, Subject Matter Expert, (502) 624-7699/DSN 464-7699 or DwyerD@ftknox6-emh3.army.mil

CPT Chet Guyer, AGR Course Advisor, (502) 624-7601/DSN 464-7601, or GuyerC@ftknox5-emh3.army.mil

Mr. George Paschetto, Technical Advisor, (502) 624-4708/DSN 464-4708, or PaschetG@ftknox5-emh3.army.mil

Dr. Connie Wardell, Educational Advisor, (502) 624-5591/DSN 464-5591, or WardellC@ftknox5-emh3.army.mil

The More Things Change...

"A recent survey of a tank battalion at Fort Hood showed that only 17 percent of the crews had been together more than six months. That fact is not unusual. Personnel turbulence is so bad we don't really have crew training — it's more like individual training with hasty assembly for the gunnery season. For years, we blamed this on the Vietnam War. We are now three years into a peacetime Army, yet the problem still exists — it's time to correct the problem..."

-LTC (later BG) John C. Bahnsen, *ARMOR* Jan-Feb 1976

Captain Daniel Dwyer has served as a tank platoon leader, tank company XO, scout platoon leader, and battalion maintenance officer with 2nd Battalion, 35th Armor, 4ID (M); as S4, 3rd Brigade, 11ID, and company commander of both A Company and HHC, 1st Battalion, 63rd Armor, Vilseck, Germany. He recently served as a Small Group Instructor in 3rd Squadron, 16th Cavalry at Fort Knox, Ky.

When Close Air Support Grew Distant

Contributions in Military History Number 25: **A Hollow Threat: Strategic Air Power and Containment Before Korea** by Harry R. Borowski; Greenwood Press, Westport, Conn.; 1982; 242 pages; \$53.40 (CAC Book Store, Ft. Leavenworth, Kan.).

Officers in Flight Suits: The Story of American Air Force Fighter Pilots in the Korean War by John Darrell Sherwood; New York University Press; 1996; 239 pages; \$22.90 (CAC Book Store, Ft. Leavenworth, Kan.).

Crimson Sky: The Air Battle for Korea by John R. Bruning, Brassey's; Dulles, Va.; 1999; 232 pages; \$24.95 (Barnes and Noble).

Natovskiye Yastreby v Pritselye Stalinskikh Sokolov: Sovetskiye Letchiki na Zashchitye Neba Kitaya i Korei (1950-1951) (NATO's Hawks in the Sights of Stalin's Falcons: Soviet Fliers in the Protection of the Skies of China and Korea 1950-1951) by Vitaliy P. Naboka, Soviet Kuban Publishing, Krasnodar, Russia; 1999; 238 pages, \$26.95 (East View Publications) (In Russian).

While doing research on the 32nd Armored Regiment's combat trail during WWII, I was amazed to see how close the cooperation had been between the 3rd Armored Division's units and fighter-bombers from the 9th Air Force. It appears that each combat command had at least four P-47s up on station and on call during daylight hours for most of their drive across France, and that the P-47s were very good at nailing the ground targets picked out by the 3AD forward observers and relayed back to the aircraft. But when looking through the war in Korea, and then Vietnam and the Gulf War, this cooperation seems to slowly disappear and eventually turn up totally missing. The turning point seems to have been in Korea, where the USAF went from performing pinpoint strikes to simply carrying out either area missions — Battlefield Air Interdiction — or strikes on strategic targets in support of combat. Only the Navy and USMC air elements showed that they could carry out precision close air support missions.

Reading these four books in sequence gives a good reason to understand the change which took place in USAF thinking, and why. The third one gives a balanced view of what took place in Korea, and the desire and skills of the Naval air crews in carrying out the precision missions needed to provide direct support. The last one presents a Soviet (now Russian) view of what happened in Korea between June 1950 and July 1951, and clears up many of the myths of the Korean Air War.



(Unfortunately, the latter book is in Russian and there is not much hope of seeing it translated into English.)

When the USAF was created as a separate service in 1947, it was ill-prepared to meet its new tasks as the strategic bombing arm of the new Department of Defense. Most of its WWII personnel had mustered out, and many of its new recruits were mentally substandard. An official policy which stated that all personnel will be pilots, and no special staff officers were to be trained and fielded to units, resulted in a force in chaos and at very low standards of readiness. Only two bombardment groups were capable of delivering nuclear weapons, and not all of those personnel were up to speed.

Politically, however, the USAF was pushing the doctrine of strategic daylight bombardment with nuclear weapons as the only military strategy needed by the United States. This did not play well with the USAF in such disarray, and it was only after the replacement of key general officers with people like Hoyt Vandenberg as CSAF and Curtis LeMay as commander, SAC, that things began to change. But at the same time, the Air Force began really pressing for new aircraft and more money, manpower, and a premiere place in determining U.S. military strategy.

There is an old "Inside the Beltway" saying that the three major services follow the rule of the three Ds: the Air Force is devious, the Navy is deceitful, and the Army is dumb. In 1948-49, this was quite true, and as a result, the Air Force was able to present sufficient material to Congress and the lackluster Secretary of Defense, Louis Johnson, to get the funding and assets they needed. The Navy balked at this, and eventually began what became known as the "Revolt of the Admirals" over vesting so much money and so many assets with the USAF. The Navy felt confident that they could carry out the nuclear delivery mission from carriers, particularly the new *USS United States* supercarrier, and that the USAF was misleading the public with its extravagant claims. One admiral challenged the Air Force to "bomb" Hawaii, as he boasted his

Navy jet fighters could intercept even the then-new B-36 very heavy bomber far out at sea and shoot it down. This challenge was quietly turned aside by the Air Force, and with the resulting discovery of the Navy twisting the facts in the "Revolt of the Admirals" was consigned to the back shelf of history.

While the Navy tended to look to highly educated officers to train as pilots, the Air Force was still preferring the "good old boy" from the country, as he was more likely to be trained to take the type of risks the Air Force saw as necessary. As a result, in 1950 the Air Force had the least well educated officer corps of any of the services. The Air Force pressed greater stress on piloting skills and aggressive behavior than it did on intellectual skills, and as a result anyone who did not fly as aggressively as generals such as LeMay thought they should wound up being forced out for "FOF" — fear of flying. Pilots thus tended to do what they were told, and thought little about the consequences.

When the Korean War broke out in June 1950, the USAF and the Navy both responded to the challenge at once. But too many USAF planners had made too many assumptions, and while the USAF basically wiped out three-quarters of the North Koreans' propeller-driven air force in less than three months, they were totally unprepared for what happened in November 1950 when the Soviet Union covertly began flying air defense over the remnants of the Democratic Peoples' Republic of Korea. The MiG-15 was a nasty surprise, far superior to anything then in the air in Asia. Six weeks later, the USAF placed its own best fighter, the F-86 Sabre, up against the MiG-15.

The true results of the air war in Korea have unfortunately transcended into myth, created by flacks and other pro-USAF writers who loudly proclaimed that the Air Force had established air superiority over Korea. The reality of what happened does not match those claims, and the seeds of decline in the close air support business grew from that war and its results.

First of all, the USAF did not bring its premiere close support aircraft to Korea. The propeller-driven P-47s were left behind, and were being phased out of service. The plane they did send, the F-51D Mustang, had proven itself as a good fighter in Europe, but was not as effective as the P-47. Still, in the early days of the conflict, F-51s carried the bulk of the USAF close air support and BAI missions, and did good work, but they were more vulnerable to ground fire than the P-47. And once the MiGs were introduced, the F-51s could do little but try and get out to the Yellow Sea/Gulf of Korea before the MiGs could catch them. In contrast, the Navy and USMC brought their WWII-era F4U Corsairs and AD Skyraiders with them, and they proved excellent at the job, causing most of the close air support damage. One Chinese commander (who was retired shortly after making this comment) indicated that the PLA took 300,000 KIA and nearly one million WIA in Korea, most of which he attributed to the "blue" aircraft.

A second factor was that the USAF insisted on using early jet fighter-bombers in Korea, and they were not well-suited to CAS or BAI. A key reason was their range: they flew from bases in Japan and as a result could carry only a tiny amount of ordnance to place on target. Pilots were also loathe to "gut it out" and get down within range of the high concentration of ground AA defenses. Navy and Marine pilots did so far more often, and took the losses. (*Crimson Skies* also has one of the best accounts of the tragic death of Ensign Jesse L. Brown, the first African-American Naval aviator, who died when his F4U Corsair crashed after being hit by rifle fire. Why no one has made a film of this incident is beyond me.)

A third factor was that the USAF concept of strategic daylight bombing failed. The MiG-15 showed it could easily penetrate fighter screens and attack propeller-driven bombers. The Soviets claimed 69 B-29 bombers during the course of the war (the USAF admits 17, and then claims most of them were lost to flak; but one needs to realize that the air crews referred to the cannon fire from the MiG-15 as "Horizontal Flak" due to its size and amount of damage inflicted). This successively forced the USAF to night bombing with radar, then night bombing in heavy cloud cover. As a result, the strategic bombing campaign proved little and accounted for only what minuscule industries the North Koreans had developed.

A fourth factor, due to the problems with fighter-bombers and with strategic bombing, and a constant pressure from the American press on USAF failures in Korea, there was a change in the approach to how the USAF dealt with the press and its image. Recent accounts from USAF personnel indicate that, at the time, no one wanted to tell General LeMay that his strategic fighter escort for his bombers — the Republic F-84 Thunderjet — could neither fight with nor repulse a determined attack by the MiGs. They also did not know how to point out that the defensive fire control onboard the B-29s and other bombers could not compensate for nor track an incom-

ing jet fighter. The USAF claims 27 MiGs were shot down by B-29s and dozens more damaged, but the Russian archives indicate only one which may have succumbed to bomber defensive fires.

Reporting tended to get more inventive, focusing nearly exclusively on the air-to-air battle rather than the air-to-ground results. For example, claims for the first year of the air war indicate "over 200 MiGs" were shot down by USAF pilots. Russian archives indicate 33 MiGs lost in air-to-air combat and two more in accidents. They claim 233 U.S. aircraft shot down, but there is no accurate version of what was actually lost to refute that number.

What is also overlooked is how the MiGs were deployed and fought. MiG priorities were: strategic bombers, fighter-bombers, and then fighters, in that order. Very snide comments by USAF pilots of MiGs running away ignore the fact that the MiGs were focusing on fighter-bombers and B-29s. The combat reports of the MiG pilots indicate a very clear concept of mission and desire to prosecute attacks on USAF aircraft, forcing many missions to dump their bombs and run for the water. Due to Stalin's paranoia that the participation of his units in Korea would be uncovered, MiGs were ordered to fly no further south than Pyongyang (when it was in Communist hands) nor over the water on either coast of Korea. U.S. air crews figured this out, and until the Chinese began to put reasonably qualified formations of MiG pilots into the air in late 1951, this remained a "time out" area for crews under attack.

Finally, losses on both sides were "adjusted" and changed to suit the views of specific audiences at home. The USAF has long claimed a 13:1 kill ratio in Korea. The way this was figured was like this: the USAF admitted to only 58 F-86E losses in air-to-air combat as opposed to 792 claims against MiGs, which results in a ratio of 13.6:1. However, these admitted F-86E losses were limited to those which met USAF criteria: They had to take place (a) in aerial combat (b) over the target area and (c) result in a clear-cut shoot-down of the aircraft by an enemy aircraft. Anything else would be considered either a non-combat operational loss, non-combat loss, or aircraft loss due to unknown reasons. These included aircraft which were shot down due to anti-aircraft fire or which were so badly shot up in combat that they crashed in the Gulf of Korea/Yellow Sea area or on their way back to their bases. When the numbers for all of these "other" losses are examined — and there is no way to separate out many actual air-to-air losses from the other three — the numbers change drastically. The Soviets admitted 334 air-to-air losses and the Chinese a further 231, for a total admitted air-to-air loss of 565. (Korean numbers are not known, partially because of ridiculous KPAF claims of no losses versus 8,000 aircraft shot down in air-to-air combat.) The Soviets claimed 1,097 aircraft in air-to-air combat and the Chinese a further 271, or 1,367 total air-to-air claims. The USAF admits to only 137 air-to-air losses, but the other admissions include 447 due to "ground fire," 68 "unknown" combat losses,

and 308 "operational non-combat" losses. A total of 218 Sabres were lost due to all causes, including accidents.

Both sides began to count claims rather than validated kills toward the end of the war. Any MiG which was shot up and seen to be leaving gray smoke or vapor trails from its engine was counted as a kill, even though the Soviets indicated that the engine was very durable and would get the pilot back with an amazing amount of damage. Likewise, Soviet pilots who fired at Sabres and saw a long streak of black smoke come from the tailpipe also counted them as kills. The Soviets did not realize that this was normal for a Sabre's GE engine at full throttle, which is where it was when the pilot found himself under attack!

The bottom line from Korea, reflected in the results of ground combat, were that the USAF could effectively prosecute none of the missions it had touted as its field of excellence. Strategic bombing was a bust; air superiority only possible for a short period of time over the target, if at all; and mediocre results from its CAS and BAI missions. The Navy and Marines came away from Korea as skilled practitioners of the art, and with an eye towards the future. But the USAF myth caught on, and to this day many Air Force writers solemnly believe that the USAF was the dominant power in Korea.

The reality of the war would tend to support more like a 1:1 loss ratio in actual aerial combat. Pesky items like a list of U.S. POW/MIA personnel shows a number of F-84 and F-86 pilots shot down in aerial combat on days when the USAF officially admitted no losses. The USAF came out of Korea with its "fighter jock" mentality in the ascendant, and a total whitewash of the failure of both its strategic and tactical bombing policy. After Korea, the USAF worked hard at cultivating its image as aerial superiority via fighter dominance, while CAS and BAI took a back seat, and even in Vietnam were not pressed as capabilities.

The Air Force was more effective at CAS in Vietnam than in Korea, primarily due to the adoption of the Navy-designed F-4 Phantom, which was a true multi-role aircraft. The development of the A-10 "Warthog" held promise that the USAF was going to seriously get back into the WWII role it did so well. But both before and after the Gulf War — where the lowly A-10 shone as the USAF's only true tank killer — the USAF was again touting its fighters as fighter-bombers and conducting CAS from 12-15,000 feet. The results from Kosovo show that the USAF is still adhering to its beliefs, even when the reality of "CAS from 15,000 feet" shows errant bombing of civilian targets and only three confirmed tank kills. Until the USAF realizes its erroneous thinking, the image frozen in time from Korea will remain its elusive, and unobtainable, goal.

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Chechnya's Grim Sequel: David and Goliath Square Off in Round Two

The War in Chechnya by Stasys Knezys and Romanas Sedlickas, Texas A&M University Press, College Station, Texas; 1999; 359 pages; \$32.95 (hardcover).

I found myself paging back and forth through this book, about the first war in Chechnya, as I watched the second — and still ongoing — war in Chechnya on CNN. The book was written by Stasys Knezys, a retired colonel of the Soviet Union's Air Defense Forces, and Mr. Sedlickas, a former major in the U.S. Air Force, and it is an amazingly impartial analysis of what went on in Chechnya between October 1994 and November 1997. My reaction to the book, reading it while watching Chechnya War 2, was that the Federal Russian Army was using this book as a guide on what would work and what would not.

The book portrays a very ugly war. There is no standoff, precision-guided, clean combat detailed here; rather, it is a conflict more like World War II, our fathers' or grandfathers' war. I got a real feel for the conditions both sides faced. The authors very convincingly show us that the Russian Goliath was not as clumsy as we thought, and that the Chechen David was not nearly as noble as we thought.

The book develops a neo-Clausewitzian view of war in this postmodern age. The trinity of the state, the people, and the army is relevant, but is also supplemented by a new trinity of politics, the military, and terror. This is a very disturbing idea, but an accepted form of war used by the Chechens — terror as a means to an end. The end, which led to the hiatus in the war in 1997, justified the means of terror, which made the conditions for victory so costly that the Russians made terms. Politics clearly drove the objectives of the war. Terror, in Chechnya War 1, was judiciously applied, in the eyes of the Chechens. Terror in Chechnya War 2 appears to be overused and made the conditions for victory more palatable to the Russian government and people.

Information operations are analyzed. The Chechens capitalized on their perceived role of underdog, fighting a tough battle for freedom against a tottering imperialistic giant bent on retaining a vestige of empire. They used web sites, faxes, media access, and the brutal nature of the war as reinforcing fire against the Russians. The Russians never really had a chance in this supporting operation to the campaign. Clearly, in War 2, the Russians are doing a much better job. I visited a Russian web site on the war which portrayed the Chechens as criminals and terrorists. The series of bomb attacks in Moscow and other Russian cities certainly assisted this effort of making the enemy look like criminals.

Terror as a method of war, clearing population zones to prevent the enemy from using the people, war carried into cyberspace to sustain the morale of the home front and to demonize the enemy, all of this is unsettling to a conventional soldier raised in the Cold War. This book really made me think about future conflicts we may face as the little wars on the fringes of old empires boil over into regions that directly affect our vital national interests.

The final chapters, which detail lessons learned through analysis of both sides, are extremely disturbing. While slow to open, this book must be studied by serious students of war. Buy it, read it, think, and read it again. I was constantly reminded of what General Lee said at Fredericksburg: it is good that war is so terrible lest we grow too fond of it. This book describes a new type of warfare that we must learn how to deter, because if we fight it, we may have to become as savage as our enemies in order to set the conditions for our victory. And we will have to figure out how to justify to the world the means we employed to reach our ends.

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WEST WALL: The Battle For Hitler's Siegfried Line September 1944-March 1945 by Charles Whiting; Combined Publishing, Conshohocken, Pa.; 2000; 199 pages; \$27.95.

Charles Whiting has written the first in a series of nine volumes of WWII military history to be published by Combined Publishing between now and Autumn 2002. He implies that this may be the first look at what until now military historians have considered to have been little more than "...a series of separate engagements, only tenuously linked." His work describes the construction of, and battle over, the German Siegfried Line. Whiting informs the reader of his thesis early in the foreword: "...the battle [The Battle for Hitler's Siegfried Line] [was not only] the most important of the 1944-5 campaign against Germany, but ...it was the key battle of the entire war in the west." One could reasonably expect that, after a statement such as that, the author would provide documentation to back such a claim. That is, unfortunately, not the case. But if the reader understands this up front, then the book is a remarkably enjoyable read.

Whiting describes the West Wall (aka the "Siegfried Line") as the German equivalent to the French Maginot Line, but with fundamentally different results: "The battle [for the West

Wall] had prolonged World War II in the west by half a year, and the cost in Allied dead had been greater than the U.S. Army alone suffered in ten years of war in Korea and Vietnam." The elaborate defensive line incorporated the best of France's Maginot Line (a linear defense design with supporting fires) but avoided the weaknesses (single line of defense with zero air defense capability). It was a fortified defense-in-depth which was tied in with natural obstacles. These characteristics made it impossible to flank (thereby avoiding the Maginot Line outcome) and, most importantly, made it feasible to man with second- or third-rate troops, thus freeing crack troops for employment in other, more critical, areas.

The book strikes me as falling into an area of "military history" between dry reference material and historical novel (the author manages to combine historical accounts with battle descriptions, excessive references to Ernest Hemingway, and even a Grimm Brothers fairy tale.) It shouldn't be confused with purist military history (the "footnotes" which appear at the conclusion of each chapter are anecdotal in nature and not citations in the Turabian format.) The reader is asked to take as historical truth too many uncited references to alleged facts; for example, at one point the author, attempting to emphasize the success of the defense of the West Wall in delaying advancing Allied units, claims that Eisenhower not only would have welcomed a German attack into the Ardennes as a means of not having to deal with the West Wall, but that he knew it was coming. And this without the benefit of a footnote.

That observation having been made, Mr. Whiting has succeeded in putting a dog-tired GI face on this horrific battle, and I look forward to subsequent additions to this series. In sum, I recommend this book as an addition to a military historian's collection of WWII references as a human interest work, and not a citable reference work.

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The Eyes of Orion: Five Tank Lieutenants in the Persian Gulf War by Alex Vernon with Rob Holmes, Greg Downey, Neal Creighton and Dave Trybula; Foreword by Barry R. McCaffrey; Kent State University Press; 1999; 360 pages, hardcover; \$35.00.

Most officers eventually begin a professional library. It may start accidentally with random purchases at the Post Exchange or with

books left over from college. With time and experience, the choices become more refined. Certain books form the foundation of many of these professional libraries. *The Killer Angels*, *Platoon Leader*, *Company Commander* are early additions. Later, titles like *We Were Soldiers Once and Young...* and *Once an Eagle* are added and, in the case of the latter, read and reread. These thoughts come to mind when one reads the recently published, *The Eyes of Orion: Five Tank Lieutenants in the Persian Gulf War*. Not only is it a fine personal memoir, but it is as worthy an addition to a professional library as the titles listed above.

Eyes of Orion recounts the experiences of five armor lieutenants serving in the 24th Infantry Division (M) during Operation Desert Shield/Desert Storm. The book is a blending of their experiences leading armor and scout platoons in the same brigade. From pre-deployment to post war and post army, the fears, frustrations and very candid observations of these five young officers are told in a style that is both easy to read and insightful.

What makes *Eyes of Orion* so valuable is that it captures the experience of youth at war. Written less than a decade after the war, while the authors were still young, their work is a valuable insight into the most destructive of youthful experiences: combat.

Perspective is an important element in a memoir, and certainly in a war memoir. Desert Storm lacked the carnage and high casualties of other wars. However, the perspective on the ground in Desert Storm, like in any other conflict, was radically different from those of the home front or of hindsight. The five platoon leaders of *Eyes of Orion* did not know at the time that their war would end with little bloodshed. They expected the worst. This expectation permeates the book and makes it stand out from previous Gulf War books that dealt with the larger picture.

This narrow view makes the *Eyes of Orion* a valuable contribution to the history of the Gulf War and to one's professional library. After reading this book, one can better understand the experiences of a young, untested leader, as he trains, deploys with, and ultimately leads into battle equally untested soldiers. The authors make plain how the hopes, fears, and survival of the soldiers rested upon their actions and how they each met this responsibility.

The five authors were obviously good at their jobs: dedicated, professional, earnest, and eager. However, *Eyes of Orion* is not an exercise in self-adulation or a retelling of "war stories" of questionable veracity. The authors give praise where it is due. The soldiers, NCOs, senior leaders, equipment, and the Army in general all receive much deserved praise. Equally, their criticism is often scathing for those who do fail in their duties. However, as in any honest accounting, the authors often save the harshest analysis for themselves. One of the authors, Alex Vernon, portrays himself as ultimately being unfit to serve as an officer. The accuracy of this depiction would be a good topic for an OPD session. With the

quote from General Stilwell at the beginning of *Once an Eagle* in mind, if an officer doubts his abilities, is he then automatically unfit to lead soldiers? With Vernon, this does not seem to be accurate. His self-doubts seemed more the natural response of a young man facing one of life's most daunting responsibilities: leading soldiers into battle. Whether this is an instance of excessive criticism or a matter of competence is for the reader to ponder.

Officer retention is another topic, relevant to today's Army, that is featured in *Eyes of Orion*. Four of the five authors have left the Army, some very soon after the war. In their descriptions of how and why they left the Army, one detects a glimmer of regret and self-justification. They expressed regret in leaving the institution that gave their lives meaning and the formative experience of their lifetime. In defending their decisions to leave, the authors seem to need to justify, to themselves as much as to others, why they left. The Army, like the war, was part of their youth. They grew because of their experience and in doing so outgrew the youthful reasons for serving.

This is a valuable perspective for those still serving. Read these accounts to understand better the reality, good and bad, of leaving the service. Life will change in ways unforeseen. The intangibles offered by military service are not always readily noticed. Being in corporate middle management, or attending grad school, as some of the authors did, is not the same as serving as an Army officer. Knowing this is useful before one actually hangs up his green suit.

Eyes of Orion is a valuable addition to a professional's bookshelf. Like the classic *We Were Soldiers Once and Young...*, *The Eyes of Orion* immerses the reader in the life of a unit as it trains, deploys, and ultimately fights. Armor lieutenants would do well to read this outstanding book and learn from their predecessors.

CPT DAN LEAF
Fayette, N.C.

Frontier Cavalryman: Lieutenant John Bigelow with the Buffalo Soldiers in Texas by BG (Ret.) Marcus E. Kinevan, Texas Western Press, The University of Texas at El Paso, El Paso, Texas; 1998; 338 pages, maps, pictures, sketches, appendices, endnotes, bibliography, index; \$25.00, hardback.

Frontier Cavalryman is a first-rate account of a young cavalry officer's experiences at the turn of the century in the 10th U.S. Cavalry. Brigadier General (Ret.) Marcus Kinevan delivers a well-documented and thorough history of the Army and the U.S. Cavalry of the late nineteenth century.

Kinevan's work is centered on Lieutenant John Bigelow's personal journal, which chronicles his experiences, observations, opinions and tribulations as a young cavalry officer in Texas. Bigelow and so many of his other

West Point classmates of the class of 1877 were assigned to black regiments and posted to the frontier, where they lived, worked, trained, scouted and fought against Indians and other marauders of the then-untamed and not so glorious West. Kinevan captures a basic body of history and experience, from the education of a young officer through his trials, tribulations, and ever-broadening awareness as an Army officer stationed in Texas. Bigelow is challenged by the demands of the Indian Wars, leading and training black soldiers and living in a very Victorian society. Although this book is set over 120 years ago, Bigelow's thoughts, opinions and basic experiences parallel those of many junior leaders throughout history.

Frontier Cavalryman is a comprehensive look at the Army of the 1870s. It reveals the unpopular and demanding operations that took place in Texas during this period, while providing a glimpse of the genesis of desegregation and equity for all races in the Army and American society as a whole. In the 10th U.S. Cavalry, the Buffalo Soldiers lived, worked and fought side by side. Through their efforts, hardships, and customs, many military and cultural changes were brought about on a wider scale throughout the United States.

Kinevan is brilliant in his portrayal of Lieutenant Bigelow's experiences, but misses with his overindulgence in exploring the Victorian culture of that era. These digressions provide a glimpse into the society of the time, focusing on the Army, Texas, and the city of San Antonio. Kinevan spends perhaps too much time discussing Bigelow's relationships with girls and their parents, and with walking around San Antonio. Perhaps his purpose is to provide a sense of the boredom that made up a great deal of Bigelow's life as a young officer in Texas. A further exploration of other issues, such as training, actual operations against the Indians, or the relationships among the soldiers of the 10th U.S. Cavalry, might have better served his wider purpose.

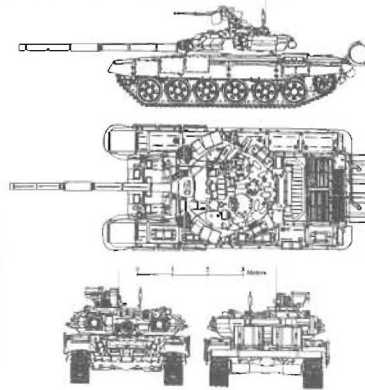
Frontier Cavalryman is exhaustively researched and documented by the author. He provides an excellent set of appendices that further detail the Army of this era. The endnotes and bibliography are well laid out and extensive. *Frontier Cavalryman* contains only a limited number of maps, photos, and drawings. This does not distract from the work, as there are photos of Bigelow, his soldiers, fellow officers and the locations where he lived, worked, and fought.

Bigelow's epitaph for a colleague perhaps best illustrates the principal feeling and message of this book: "Long and faithful performance of duty, sometimes arduous and dangerous, generally monotonous, and rarely, if ever, glorious or thrilling, has become a common thing in the traditions of the Army." Their efforts have led to the society and Army that we know today. *Frontier Cavalryman* is a worthy addition to any professional's library.

ANDRÉ HALL
MAJ, Armor, (USAR)
Heidelberg, Germany

T-90

Russian Main Battle Tank



Characteristics

Crew Size	3	Max Road Range	550km
Combat Weight	46,500kg	Max Road Speed	60km/h
Height (without machinegun)	2.226m	Armament (main gun)	125mm
Length (hull)	6.86m	Armament (coaxial)	7.62mm
Length (gun forward)	9.53m	Armament (anti-aircraft)	12.7mm
Width (over skirts)	3.78m	Armament (ATGM)	Refleks (AT-11)

Using countries: India, Russia



Patton Museum Vehicles Roar Again in WWII Reenactment

Photos by Robert Stevenson

Soldiers, military families, and the general public crowded Keyes Park, Fort Knox, to see the annual July 4 living history program mounted by the Patton Museum. Reenactment groups staged a World War II-style skirmish using original restored vehicles.



ARMOR

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